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MAJOR STREETS
SAN FRANCISCO

Report to the SAN FRANCISCO
TRAFFIC SURVEY COMMITTEE
1928

Mr. F. Dohrmann, Jr.

BARTHOLOMEW & ASSOCIATES
SAINT LOUIS MISSOURI

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MAJOR STREETS
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Report to the SAN FRANCISCO
TRAFFIC SURVEY COMMITTEE
1928

Bartholomew & Associates
Saint Louis Missouri

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Dohrmann, F.

Major streets, San
Francisco : report to
1928.

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HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLAN AND LANDSCAPE ENGINEERS
SAINT LOUIS ~ LOS ANGELES

HARLAND BARTHOLOMEW
EARL O. MILLS
L. DEMING TILTON

WILLIAM D. HUDSON
Affiliated Engineer

814 PERSHING SQUARE BUILDING
LOS ANGELES, CALIFORNIA

October 24, 1928

San Francisco Traffic Survey Committee
San Francisco, Calif.

Gentlemen:

We have the honor to submit herewith a report and plan for a Major Street System for the City and County of San Francisco.

This city has been considering street problems for many years. In 1905 the well known Burnham plan was published which, while never fully accepted, had a significant influence upon many projects since completed. During the past fifteen years many large street opening and widening projects have been completed and in 1927 $9,380,000 in bonds were approved for a program of eight projects upon which work is now well under way. All of this has been accomplished under the inspiration and able direction of Mr. M. M. O'Shaughnessy, City Engineer.

In 1927, under the direction of your committee, a report upon the street traffic control problem was prepared by Dr. Miller McClintock, which has since been officially accepted and is gradually being put into effect.

The present study, undertaken some nine months ago, follows quite logically these other reports and plans. They were dealing with more or less immediate necessities. The present plan deals with both present and future problems. It is an attempt to encompass the whole problem of vehicle movement and street space throughout the city area, insofar as this can be anticipated through study of the various factors that influence growth.

San Francisco, in common with many other large American cities, through advancements in the field of municipal and city planning law, is now for the first time in a position to officially adopt such a plan as this for future guidance of it's civic, commercial and industrial interests. It is a plan for gradual rather than immediate

fulfilment. A study of existing legislation and of new legislation needed to make possible the most expeditious and economical execution of this plan is now being made and will be submitted at a dater date.

A compilation of all street opening and widening projects undertaken in San Francisco is also in process of completion. It will form an interesting chapter in completing the history of this character of work in San Francisco.

We have sought and received much valuable aid and assistance from many sources, for which grateful acknowledgement is now made. Particularly, would we acknowledge the invaluable assistance of Mr. M. M. O'Shaughnessy, City Engineer, and Mr. Clyde Healy, Assistant City Engineer in furnishing basic data, plans for proposed new projects that have received study, as well as helpful suggestions in preparation of this plan.

Respectfully submitted,

HARLAND BARTHOLOMEW & ASSOCIATES

By Harland Bartholomew

HB-h

SUMMARY OF RECOMMENDATIONS

A concise statement of the conclusions and findings of this report.

SUMMARY OF RECOMMENDATIONS

The following recommendations should be followed in order to give full, immediate effect to the major street plan.

Group I. The following projects are susceptible of early accomplishment. They will be the means of creating traffic routes without any taking of private property.

A. Certain existing streets used as part of major routes should be repaved. The following streets are typical of those needing new pavements:

1. Streets south of Market.
2. Mission Street for almost its entire length.

B. Curbs should be set back on the following streets:

1. Van Ness Avenue from Mission to Broadway. Roadway should be increased to 90 feet. It is now 81 feet.
2. Bush Street from Kearny Street to Van Ness. Roadway should be increased to 54 feet. It is now 38.75 feet.
3. Kearny Street from Market to Columbus Avenue. Roadway should be increased to 54 feet. It is now 47 feet.
4. Columbus Avenue for its whole length. Roadway should be increased to 54 feet. It is now 50 feet.

C. Street cars should be rerouted so as to be removed from the following streets:

1. Howard Street from Embarcadero to 26th.
2. Oak Street from Fillmore to Stanyan
3. Business district streets both north and south of Market. Further study to reveal the exact streets.

D. Resubdivision of portions of the following districts should be undertaken so as to provide traffic routes of the correct alignment.

1. Sunset District.
2. Hunters Point District.

E. Traffic control recommendations of the Traffic Law Enforcement Board and the San Francisco Traffic Survey Committee should be adopted. Studies of certain important revisions in the control system are being made by these bodies jointly.

Group II. Street openings and widenings of primary importance

The following projects should be undertaken at once as the first unit of the major street plan.

1. Route 4 from Larkin to Mason, necessitating tunnelling under Broadway.
2. Route 6 from Presidio to Larkin, necessitating widening of Geary, connection to Post and widening of Post.
3. Route 10 from Fell and Oak to Bryant, necessitating opening diagonal from Fell and Oak to Duboce, widening Duboce, and extending it to 13th and widening 13th.
4. Route 12 from 20th Avenue to 16th Street, necessitating widening Judah and Parnassus extending Parnassus through a tunnel to Beaver Street, widening Beaver and extending it across Market to 16th Street.
5. Route 43 from 27th and Dolores to Eleventh & Folsom, necessitating opening diagonal from Dolores to Folsom and widening Folsom.
6. Route 48 - 50 from the Bayshore Highway to Van Ness, necessitating tunnelling from the Bayshore to Bryant, widening Bryant and carrying it over Division into 11th and Harrison, widening 11th and extending it to Lafayette, widening Lafayette and extending it to Van Ness.

7. Route 49 from Market to Broadway necessitating widening Larkin Street.
8. Route 52 from Embarcadero to Folsom, necessitating widening Harrison and extending it to Folsom.
9. Route 58 from Columbus to Front, necessitating extending Columbus to Front.

Group III. Correlated planning studies

Several studies of city planning nature bear a definite relationship to the major street plan and should be undertaken in the near future.

1. Transit study, as a basis for separation of major street traffic flow from street car movement.
2. Rezoning
3. Plan of the peninsula for the purpose of assuring avoidance of the mistakes made in San Francisco and to correlate the plan with the major street plan of San Francisco. The peninsula planning should include subdivision control.

Group IV. Legislative and financial considerations.

Studies should be begun immediately for the purpose of determining ways and means to carry out the provisions of the major street plan. Concentrated, well directed effort is necessary to determine the ability of the city to absorb the cost of the integral parts of the plan, and to secure legislative authority to execute the same in the best and most expeditious manner.

INTRODUCTION

A preliminary note on the general problems and the purpose of the report.

INTRODUCTION

> Major streets are highways largely used for through movement. They carry a heavy volume of traffic of all kinds. They serve the city at large and have an importance extending far beyond the neighborhoods through which they pass.

In San Francisco there has been no differentiation of streets in accordance with modern transportation requirements. Those arteries that have major importance in the daily movement of traffic are not coordinated in a system. There has never been an official major street plan.

There is great need of classifying the streets of the city and laying out a well-balanced plan of primary traffic routes. This is merely a recognition of the changes that have taken place in modes of transportation since the early days of the city. When people went from place to place afoot or on horseback, when horses and carriages were used and movement was leisurely, it did not greatly matter if one street was like another. Excessive grades, narrow widths, jogs and dead ends and similar highway conditions did not seriously affect the ordinary life of the community. But today the complex activity and rapidity of movement that takes place upon the streets is of such vital importance that street planning and improvement is one of the paramount interests of the municipality. It is now known to economists and engineers concerned with the scientific aspects of urban growth that control of business and industrial

activities and of general living conditions in the city is largely a matter of systematic development of major streets. Preparation of a thoroughfare plan and consistent adherence to it is a significant step in the wise guidance of city growth, substituting order for disorder, and certainty for undertainty.

The economic losses traceable to disorder and uncertainty reach enormous figures. The totals are beyond computation but it is common knowledge that great cumulative sums are wasted in the modern city because of the defective arrangement and inadequacy of the circulation system. Great economic wastes occur in the time lost and materials used in round-about travel necessitated by gaps in the street system, excessive grades, dead ends and bottle necks in main thoroughfares. There is a waste in pavements destroyed by traffic that belongs on major streets: Property values predicated upon the use of a certain street for through movement or upon the absence of through traffic may be undermined by a shift of the traffic stream. The fact that congestion is an indirect tax upon everyone in the city is today understood by every intelligent person. The least the community can do to check the economic and social wastage traceable to inadequate provisions for circulation is to designate the major thoroughfares and adopt a plan indicating the proper method of bringing them into

service in a coordinated system.

The types of streets in which the city as a whole is principally interested are the dominant through routes or major arteries. These, in the form of radial lines, should lead to the important centers, or as crosstown lines should provide for interdistrict movement. By pass routes and interchange streets also appear in a properly planned system, the former to give traffic a means of avoiding centers of concentration and the latter to allow vehicles to switch from one route to another without abrupt change of direction. All these types will be pointed out in later studies. It is sufficient here merely to mention the general service which each type renders and to indicate that the value of each depends to a considerable degree upon its place in the plan of major routes. The traffic flow which moves upon the streets and bears so directly upon the city's economic and social well-being is adversely affected by lack of a coordinated system of through routes. The major street plan is designed to weave certain fragmentary street units into a net-work of thoroughfares.

The preparation of a sound and practicable thoroughfare plan requires the use of scientific methods. The major street system to be of real value must satisfy as far as possible all the fundamental circulation requirements. Population changes, trends of residential and industrial development, shifts of property values, dominant

lines of traffic movement and many other baxic factors must be taken into account. All essential data relative to the origin and destination of present and future traffic must be studied. Forecasts and predictions are required and in these experience in dealing with similar problems elsewhere is of great value.

The great value of a major street plan is in its application to daily problems of city growth and development. The plan when applied will bring about a general betterment of traffic conditions in all parts of the city. It should be used in coordinating street improvements, so that the effects of investments in paving, widening, and opening streets will not be lost or lessened by piece-meal planning. Bridges, tunnels, grade-crossing separations become more useful to the public if their locations are checked against the basic frame-work of major streets. The plan will always tend to promote more organic development of the city by showing where improvements can be made that will really count. The determination of paving types, lighting plans, car and bus routes, and traffic control measures can be based upon the major street plan. Public buildings and grounds, such as school, fire and police stations, libraries, parks and playgrounds, can be placed

with reference to the plan and will be better located for service because of this relationship to main traffic routes. Quasi-public institutions such as churches, association headquarters buildings, charitable institutions, and clubs, can also be advantageously located with reference to the main traffic streams. Private enterprises will find the plan equally valuable. Milk distributors, laundries, retail stores, public utilities and other business houses can greatly facilitate their deliveries and services by routing according to the major street plan. Business locations can be fixed with reference to the crossing or concentration of traffic movements as indicated by the plan. Residential sites can be selected for the purpose of avoiding traffic streams. Street safety will be promoted through the marking of permanent channels, the improved arrangement of intersections, safety islands, segregation of vehicles of different speeds and other measures which logically follow the designation of major streets. The plan is invaluable as a means of preventing mistakes in new subdivisions, securing the dedication of adequate rights of way and coordination of street improvements in the initial development of property.

It is because of these manifold uses of a major street plan and the great benefits that come to the community after its adoption that the duty of supporting it falls upon every citizen. The economies of coordinated improvements undoubtedly lessen the cost of living and of doing business

in the city. The major street plan promotes coordination, focuses attention upon city-wide circulation problems and touches in some degree the interests of every citizen. When this significance of the plan is understood, any attempts to ignore it or to discard it will not be lightly considered or hastily done.

PART ONE

HISTORICAL BACKGROUND

San Francisco has had a colorful history. Its present street system reflects in many ways this romantic past but is not always equal, however, to the pressure of modern motor cars. An understanding of the present problem of circulation will undoubtedly be aided by a brief glance backward.

PLATE I

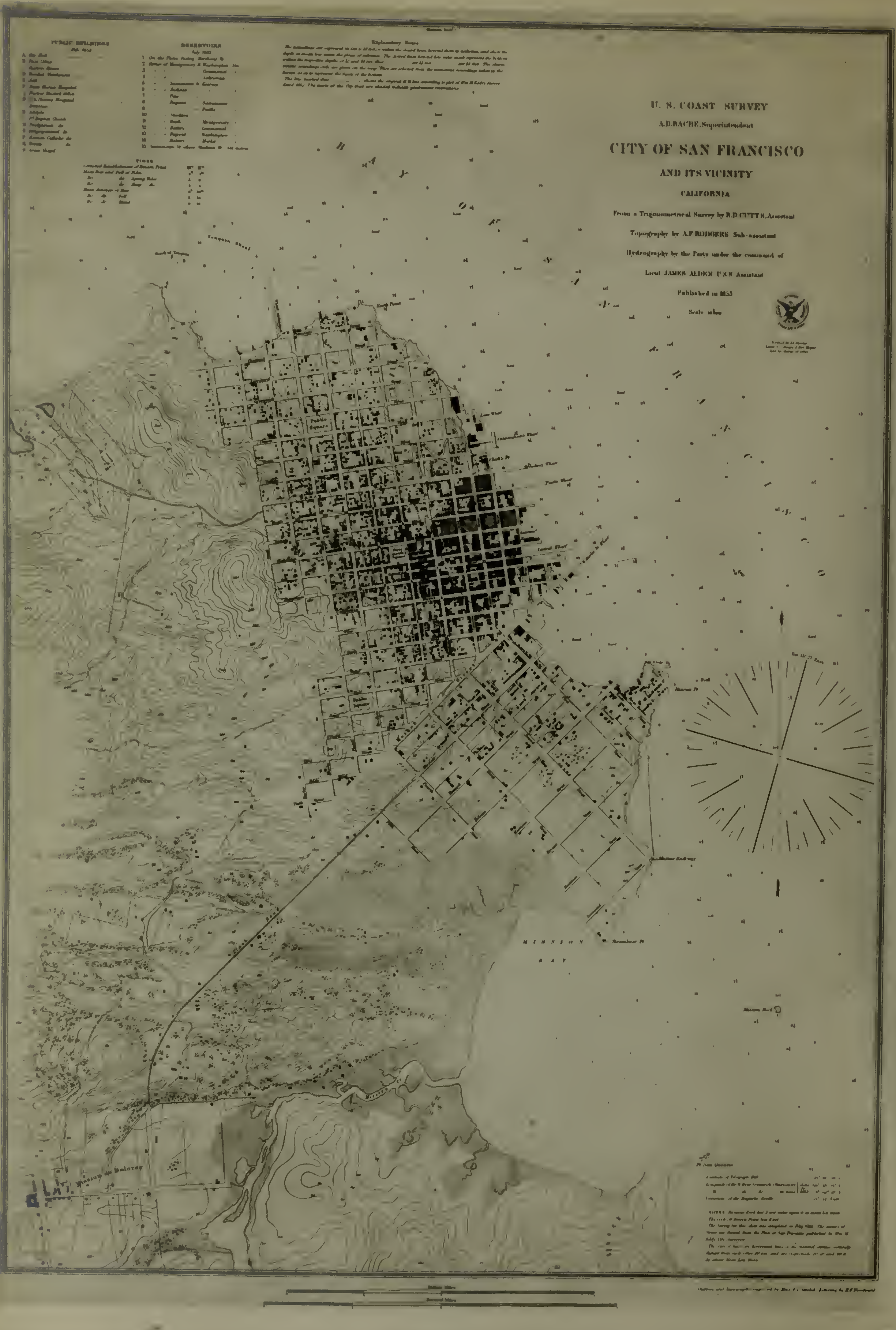

U. S. COAST SURVEY
A.D.BACHE, Superintendent
CITY OF SAN FRANCISCO
AND ITS VICINITY
CALIFORNIA
From a Trigonometrical Survey by R.D.CUTTS, Assistant
Topography by A.F.RODGERS Sub-assistant
Hydrography by the Party under the command of
Lieut JAMES ALDEN U.S.N. Assistant
Published in 1853
PUBLIC BUILDINGS
RESERVOIRS
Explanatory Notes
TIDES
BAY
MISSION BAY
Mission Dolores

Plate One

SAN FRANCISCO IN 1853

When Richard Henry Dana visited San Francisco in 1836, a few miserable huts stood near the cove which later became the water front of the city. This was the embryonic Yankee town, the nucleus of the present metropolis. The principal activities of the community, however, were centered around the Presidio and Mission which were of Spanish origin. In "Two Years Before the Mast" there is reference to the fact that horses were humerous in Monterey and other Spanish settlements and no one walked even for a short distance. "They can hardly go from one house to another without getting on a horse, there being several tied to the door-posts of the little cottages." The same complaint is often made today because of the prevalence and ease of using motor cars.

In 1853, four years after the famous Marshall discovery, San Francisco had lost much of its early Spanish atmosphere. It has moved to a new location, had a golden outlook eastward and was preparing to grow upon straight town lines. All activity was around the small harbor, which had already begun to fill up. The population was perhaps 35,000.

In this day there was little vehicular travel upon the streets. Men walked or road horseback. All parts of town

were easily reached afoot. Only the Mission and the Presidio were out in the country. The map shows the roads leading to them, following lines of easy gradient. They were common sense, natural routes, unaffected by the formalism of the surveyor.

The streets south of Market Street were just beginning to emerge. Blocks of large dimensions had been laid out in this section a year or two before because there was no demand for small parcels so far from the center of activity. But this assumption was already being shown unwise, for narrow secondary streets had been introduced into some of these large blocks in order to open up smaller tracts.

Here is early evidence of the operation of shortsightedness in the development of the city, a handicap that San Francisco has struggled against ever since. The district south of Market Street would today be the heart of the city, having perhaps the highest property values and the most intensive use, if owners of these large unwieldy blocks had resolved in 1853 or thereabouts to split them in each direction with full width streets.

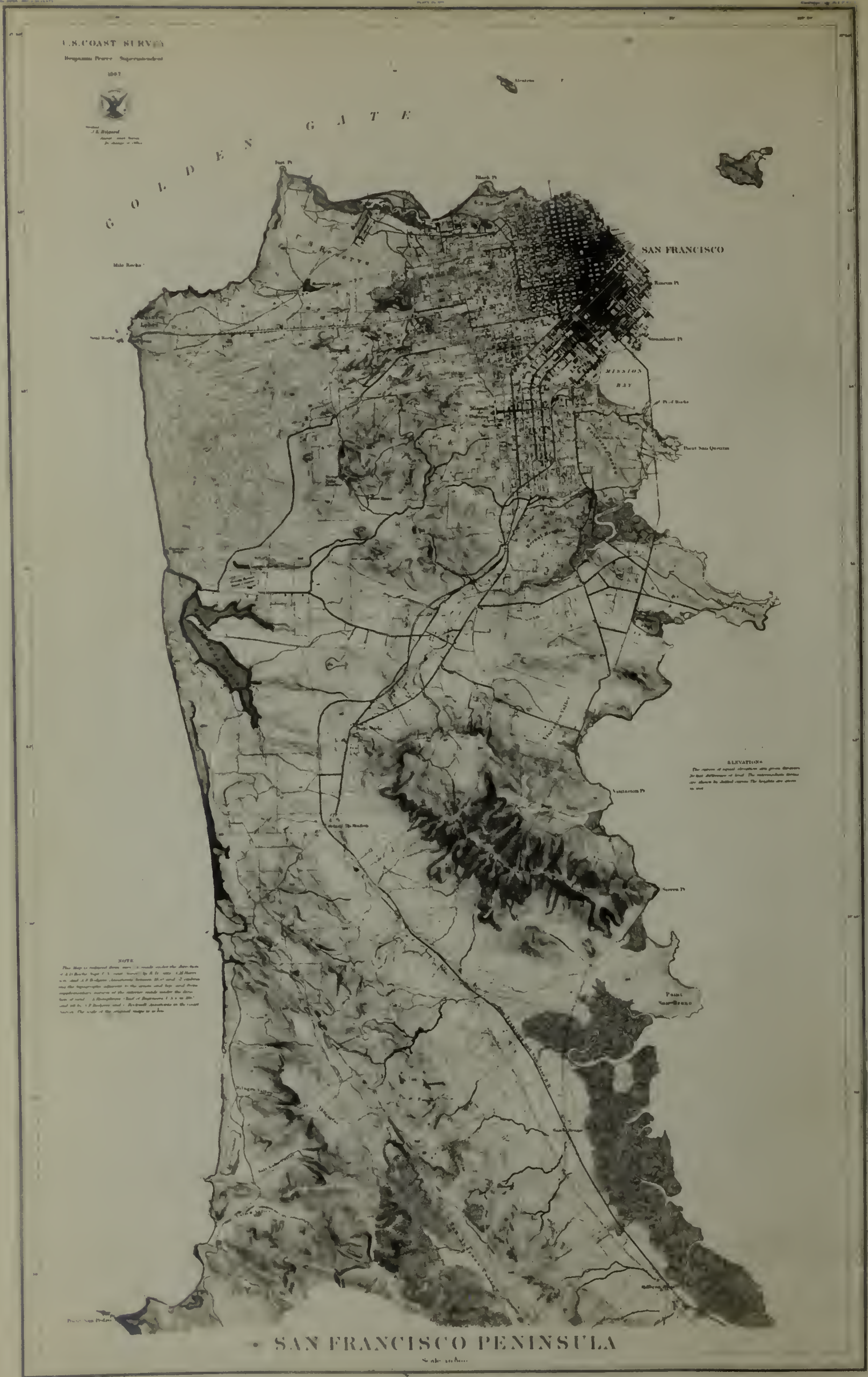
The stage of development shown in the map opposite was opportune for the sort of town planning that would have made San Francisco even greater than it is today. The hills were then still a barrier to growth, as may be seen. Some houses had dared to creep up the sides of Telegraph Hill on the steep roads laid out by Viogot and O'Farrell

but Russian Hill was bare.

As long as the town was growing on gentle slopes, the extension of the original block plan brought no trouble. The few absurdities resulting from the projection of straight streets up Telegraph Hill could have been absorbed in the pattern of the city and forgotten if only the rest of the hills could have been spared. The Spanish caballeros on their useful ponies had shown the way to negotiate steep slopes but these ideas were too primitive and reminiscent of Boston cowpaths to the newly-arrived Yankees. So the straight ways prevailed and the long unsuccessful battle of San Francisco to conquer and subdue its beautiful hills began.

Fragmentary beauty spots still remain on the summits but there is ample evidence in the long list of impassable streets, the disheartening grades, the acres of inaccessible property, the lost opportunities for creating magnificent scenic drives and hill top parks, impressive monuments and building sites and other civic features taking full advantages of elevations that the genius of man has been insufficient in this battle. Efforts to reclaim some of these opportunities have been made from time to time, but inertia was caused by things already done. Now another move is made to do what might easily have been done many year ago. This effort, however, has a much more utilitarian objective, being merely to create a system of wide, direct arteries for the conduct of through traffic throughout the vast territory of the present city.

PLATE 2



San Francisco Peninsula

Plate Two

SAN FRANCISCO PENINSULA IN 1867

This map is introduced for the purpose of showing (1) the extent of the city fourteen years after the stage of development indicated in Plate One and (2) the general nature of the topography of the peninsula.

It will be noted that the center of the community has shifted southward. Market Street has begun to assume an importance which it did not have in 1853, and the district south of it is now in general use. There is a larger settlement around the Mission and evidences of growth in the vicinity of the Presidio, but the population, probably 135,000, is still chiefly concentrated near the waterfront. This map shows plainly the early origin of the tightness of building development which still characterizes San Francisco and makes corrective street improvements difficult and costly.

Of considerable interest also is the evidence of increased travel down the peninsula and toward the beach. The Bay Shore Highway appears at the base of San Bruno Mountain, supplementing the old Mission Road. A new railroad has come into the city over long sweeping curves. Geary Street was extended to the beach as a wide straight avenue.

It was at the point of city development shown on this

map that steps were first taken to extend the street system by ordinance over many hundreds of acres of old Pueblo lands. The city of San Francisco and property owners from the earliest days were in trouble over land titles, due to the uncertain status of Spanish grants. To clear matters up the city claimed ownership of the pueblo lands, carried this claim successfully through state and federal courts and then ordered a comprehensive map made of these lands with all the streets, sites for fire stations, cemeteries, libraries, schools, parks and other public reservations designated on it. Adjustments were made with those who claimed private ownership of the land and the map was accepted in 1867. The Legislature affirmed the action of the city in adopting this map and it became the official "city plan" governing approximately three-fourths of the area of the present city. Thus sixty years ago a plan of streets for the Richmond, Sunset and other outlying districts, shown as unsettled area on the map opposite, was laid out and these street lines impressed upon the land.

It is significant to note that the preparation of this map was completed a few months after the work was ordered and cost $12,000. It is now realized that this was a tremendous sum for the city to pay for the questionable advantage of being required to exist in such a straight jacket. It could easily be demonstrated that San Francisco property owners and citizens would today be richer by millions of

dollars if a moderate sum had been spent later for a plan to escape this inappropriate pattern of streets.

The tragic feature of this episode in the city's history is that the Supervisors were warned before the survey was made that the practice of laying out gridiron streets upon such uneven land should be abandoned. Frederick Law Olmsted, the designer of Central Park, New York, who was called upon to advise the legislative council regarding park matters had this to say in 1866, the year before the great plan of streets was made:

> "At the present time the street plan of San Francisco has been contrived with scarcely any effort to adapt it to the peculiar topography of the situation. On a level plan, like the site of the city of Philadelphia, a series of streets at right angles to each other is perfectly feasible, and the design is as simple in execution as it appears on paper; but even where the circumstances of site are favorable for this formal and repetitive arrangement, it presents a dull and inartistic appearance, and in such a hilly position as that of San Francisco, it is very inappropriate. If the present site, as it was in 1850, had now to be laid out for a large city, it would be desirable to adopt a different arrangement in many respects.
>
> "If hills of considerable elevation occur within the boundary of a site marked out for a city, this salient difficulty should be met at the outset, and a series of main lines or roads should be arranged that will ascend these hills diagonally, in such a way as to secure sufficiently easy grades. The skeleton lines being thus determined on, a series of transverse and cutting streets should next be provided that will divide the whole into sections of moderate size, and each of these intermediate districts should then be planned separately, and with as much regularity as the circumstances of the case admit.
>
> "The city of San Francisco is unquestionably in a very different degree of advancement from what it was in 1850; but even now it is evident that by far the larger portion of the city remains to be built up. Although, therefore, very much has been done that it would be im-

possible to think of changing, and the interests involved in the portions that are not improved are, doubtless, so numerous as to make a change anywhere difficult and troublesome; still the future advantage to the city of judicious reconsideration of the whole subject at this time can hardly be overestimated, especially with reference to that portion of the city that remains entirely unoccupied by buildings of a permanent character.

"The first cost of constructing the streets upon such a plan as had been suggested, would probably be less than upon the present; and the advantage in the saving of wear and tear to horses and vehicles, to say nothing of fatigue to persons on foot, would be incalculable."

PLATE 3

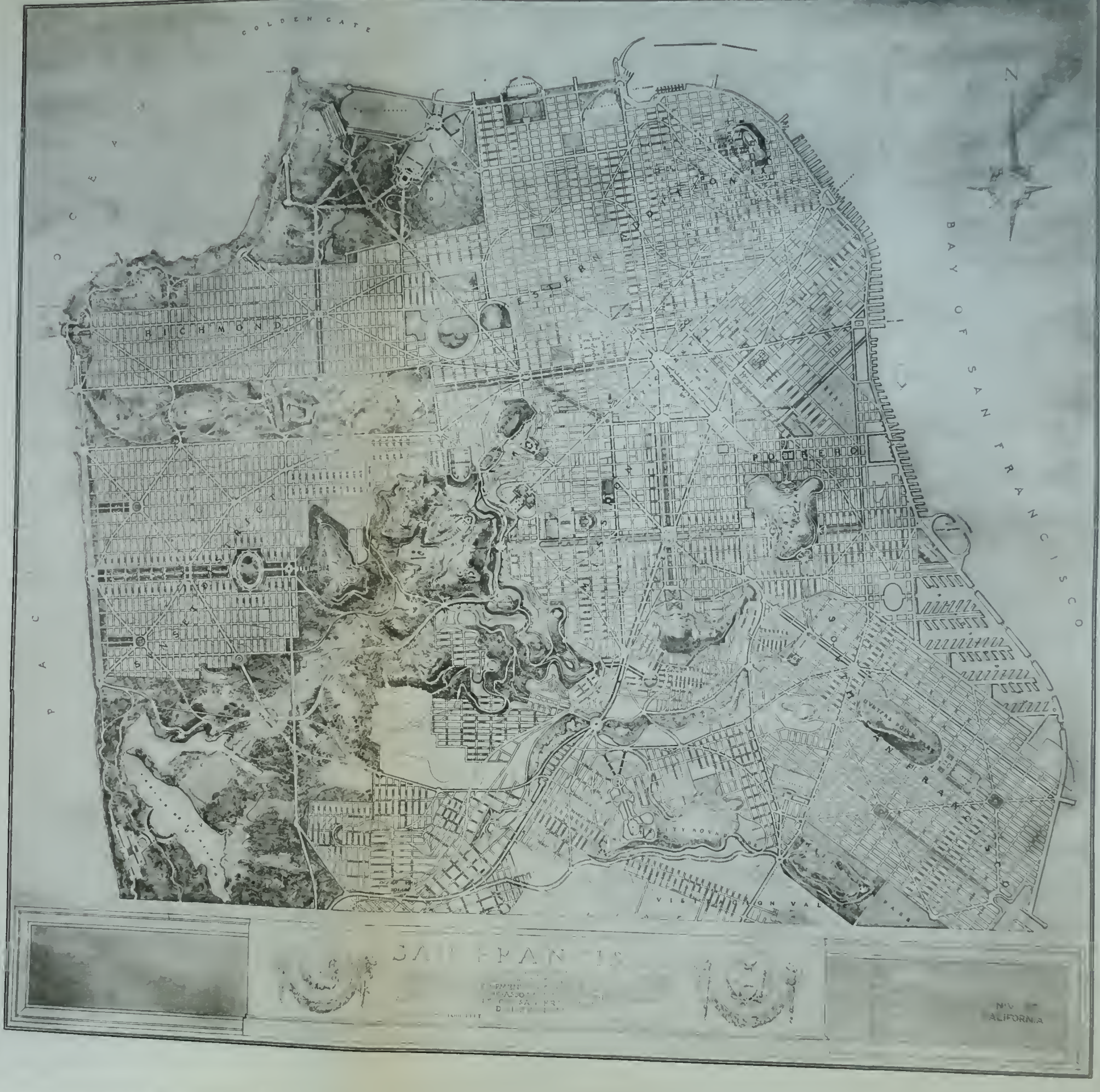

GOLDEN GATE
PACIFIC OCEAN
BAY OF SAN FRANCISCO
N
RICHMOND
WESTERN ADDITION
POTRERO
MISSION
SUNSET
HUNTERS POINT
SOUTH SAN FRANCISCO
VISITACION VALLEY
SAN FRANCISCO
UNIV OF CALIFORNIA

Plate Three

THE BURNHAM CITY PLAN

It was nearly forty years after the adoption of the "plan of outside lands", as it was called, before any constructive protest was made against its absurdities. In 1905 however, a group of citizens who were conscious of the failure of this plan to fit the tarrain and its inability to reflect the greatness of the city, employed Daniel H. Burnham, an eminent architect of Chicago, to submit a new plan for the guidance of subsequent growth.

In the year following the presentation of the Burnham Plan, the great catastrophe took place. The city was swept by fire and many acres of territory in which changes in the existing street plan were proposed were cleared of buildings. Here was a golden opportunity for the city, but the Burnham Plan was largely ignored. In the days of recovery its imaginative appeal was lost in the welter of demands for immediate restoration of business and the reconstruction of dwellings.

It is now quite without the realm of possibility that San Francisco can undertake magnificent improvements such as those proposed in the Burnham Plan. Since the time of Burnham's study, the city planning movement has had a new orientation. City beautification is not the primary purpose of planning now, but rather is the aim to give in a practical way a healthy, organic structure and a sound body. Street planning is the very foundation for the structure of the city's plan.

PART TWO

TOPOGRAPHIC FEATURES OF THE SITE

The works of nature have contributed mightily to the development of San Francisco. The protected harbor, the gold in California streams, the beautiful hills, the catastrophe of 1906, each has had a part in making the modern city. But some of the most serious present-day problems are due to the unwillingness of pioneer street planners to adjust the pattern of the city to natural slopes.

PLATE 4

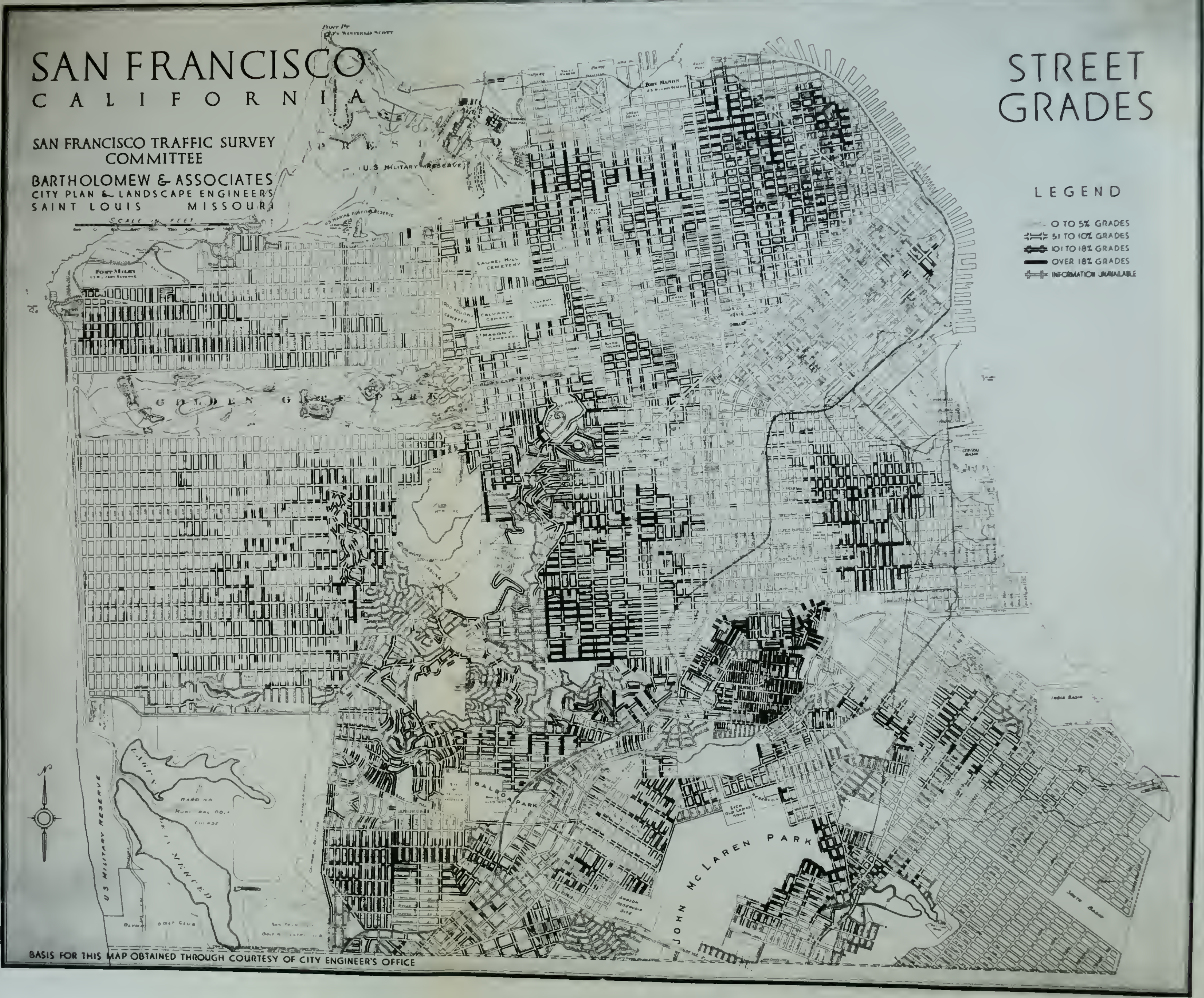
SAN FRANCISCO
CALIFORNIA
SAN FRANCISCO TRAFFIC SURVEY COMMITTEE
BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
SAINT LOUIS MISSOURI
SCALE IN FEET
STREET GRADES
LEGEND
0 TO 5% GRADES
5.1 TO 10% GRADES
10.1 TO 18% GRADES
OVER 18% GRADES
INFORMATION UNAVAILABLE
PRESIDIO
U.S. MILITARY RESERVE
FORT MASON
FORT MILEY
LAUREL HILL CEMETERY
CALVARY CEMETERY
MASONIC CEMETERY
ODD FELLOWS CEMETERY
GOLDEN GATE PARK
LAGUNA HONDA
BALBOA PARK
JOHN McLAREN PARK
LAKE MERCED
U.S. MILITARY RESERVE
OLYMPIC GOLF CLUB
CENTRAL BASIN
INDIA BASIN
SOUTH BASIN
N
BASIS FOR THIS MAP OBTAINED THROUGH COURTESY OF CITY ENGINEER'S OFFICE

Plate Four

STREET GRADES

In this diagram the grades of San Francisco streets are classified in four groups:

1. From 0 to 5 percent, normal grades
2. From 5 to 10 percent, negotiable by trucks and requiring use of second gear by some cars.
3. From 10 to 18 percent, negotiable only with considerable effort.
4. Above 18 percent, practically useless for ordinary street purposes.

Approximately one-third of the streets of the city are removed from service because of excessive grades. This fact alone suggests the difficulties to be overcome in working out a comprehensive, well fabricated plan of major traffic arteries. The gaps and holes in the street pattern due to these extreme grades show plainly in the diagram. Each area of this sort is a stubborn barrier to the opening of usable through streets. These conditions point to the ultimate need of more tunnels for vehicular traffic and to the need of bridges and cuts to reduce grades on certain well located and otherwise useful streets.

Consider Dolores Street, for example. It is well placed for service in a broad thoroughfare scheme. It is practically an extension of the Bernal Cut, and is easily reached from Mission Street. It has a width of 120 feet, which is

sufficient to carry practially all the traffic that could use it for many years. But grades of 17, 14, 13 and 12 percent occur on Dolores and render it unfit in its present condition for general through movement.

Grades on certain other well placed and wide streets are equally severe.

California has grades of 18, 16, 12, 10 and 9 percent.

Broadway has grades of 30, 21, 19, 17, 15 and 10 percent.

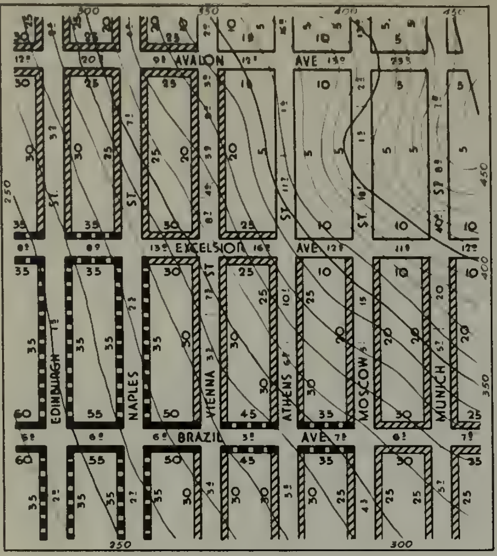
Fulton has grades of 10, 8 and 7 percent.

Divisadero has grades of 21, 18, 14 and 11 percent.

Those faults of the street system, which the elder Olmsted noted and spoke against, have undoubtedly had a pronounced influence in forming the character of San Francisco. The use of private vehicles has not been encouraged and a heavier burden has been thrown upon street cars, which were propelled up the steep grades long before the day of the automobile. Today automobile ownership in San Francisco is low by comparison with other California cities and the reason is largely that motoring here, where no well marked system of direct easy gradient, interconnected thoroughfares exists, is much less enjoyable than it is elsewhere. The same handicap of heavy grades which keeps the potential pleasure motorist at home without a car has also a retarding affect upon the daily flow of utilitarian traffic upon which the life of the city depends.

PLATE 5

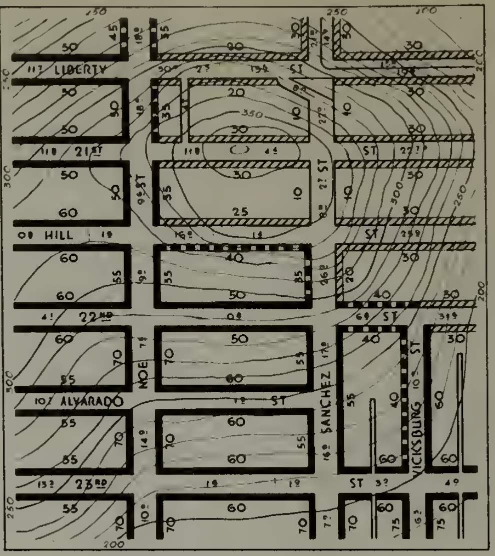
A



EXCELSIOR DISTRICT

SHOWING THE EFFECT OF HEAVY GRADES UPON PROPERTY VALUES. FRONT FOOT VALUES RANGE FROM $60 IN FAIRLY LEVEL SECTIONS TO $5 ON THE STEEP HILLSIDES

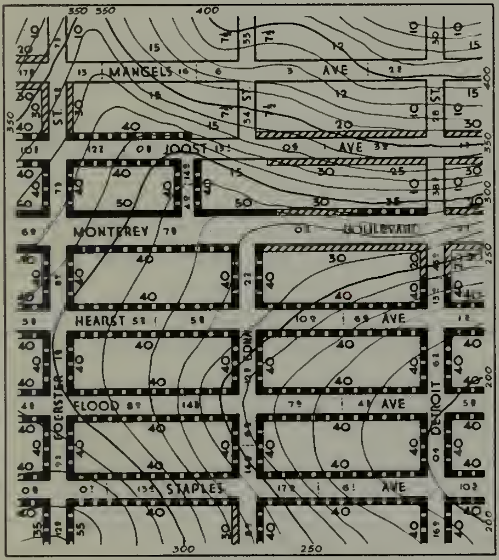
B



MISSION DISTRICT

THIS SECTION HAS A HIGHER SCALE OF VALUES THAN PANEL "A" BUT SHOWS A SIMILAR EFFECT OF GRADES UPON VALUES. MAXIMUM VALUE - $70. MINIMUM VALUE - $10.

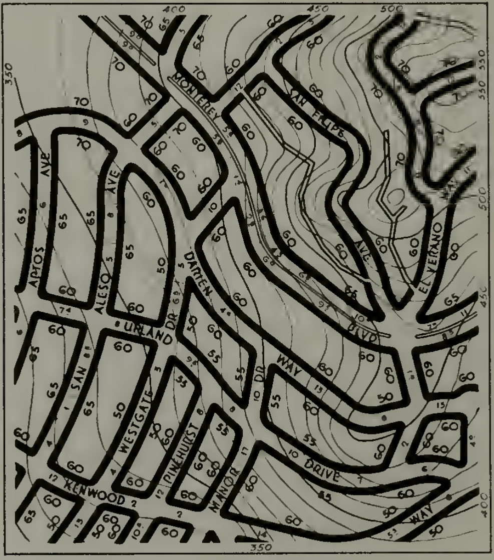
C



SUNNYSIDE DISTRICT

DUE TO TOPOGRAPHY HERE MANGELS AVENUE AND A PORTION OF JOOST AVENUE HAVE NOT YET BEEN CUT THROUGH. VALUES ARE RESULTINGLY LOW. AFTER THE STREET WORK WILL HAVE BEEN DONE VALUES WILL STILL BE LOW BECAUSE OF SEVERE GRADES.

D



MONTEREY HEIGHTS DISTRICT

THE TOPOGRAPHY HERE IS SIMILAR TO THAT OF EXAMPLES "A" "B" & "C" BUT BY A PROPER ARRANGEMENT OF STREETS ACCESSIBILITY HAS BEEN MAINTAINED AND HILLSIDE SITES HAVE RETAINED THEIR VALUES. SUCH WISE PLANNING SHOULD BECOME THE STANDARD OF FUTURE GROWTH

SAN FRANCISCO
CALIFORNIA

LAND VALUES & STREET GRADES

SAN FRANCISCO TRAFFIC SURVEY COMMITTEE
HARLAND BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
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LEGEND

LAND VALUES

- $50 & OVER PER FRONT FOOT
- $35 TO $45 PER FRONT FOOT
- $20 TO $30 PER FRONT FOOT
- $15 & UNDER PER FRONT FOOT

GRADES

- FIGURES INDICATE GRADES IN PER CENT BETWEEN INTERSECTING STREETS OR OTHER POINTS AS SHOWN
- GROUND SLOPES SHOWN BY CONTOURS OF 10-FOOT INTERVAL — FIGURES INDICATE ELEVATIONS ABOVE SEA-LEVEL

LAND VALUATIONS OBTAINED FROM "STAFFORD'S LAND VALUE MAPS" ISSUED BY S F BOARD OF APPRAISALS

SCALE IN FEET
200 0 200 400 600

Plate Five

LAND VALUES AND GRADES

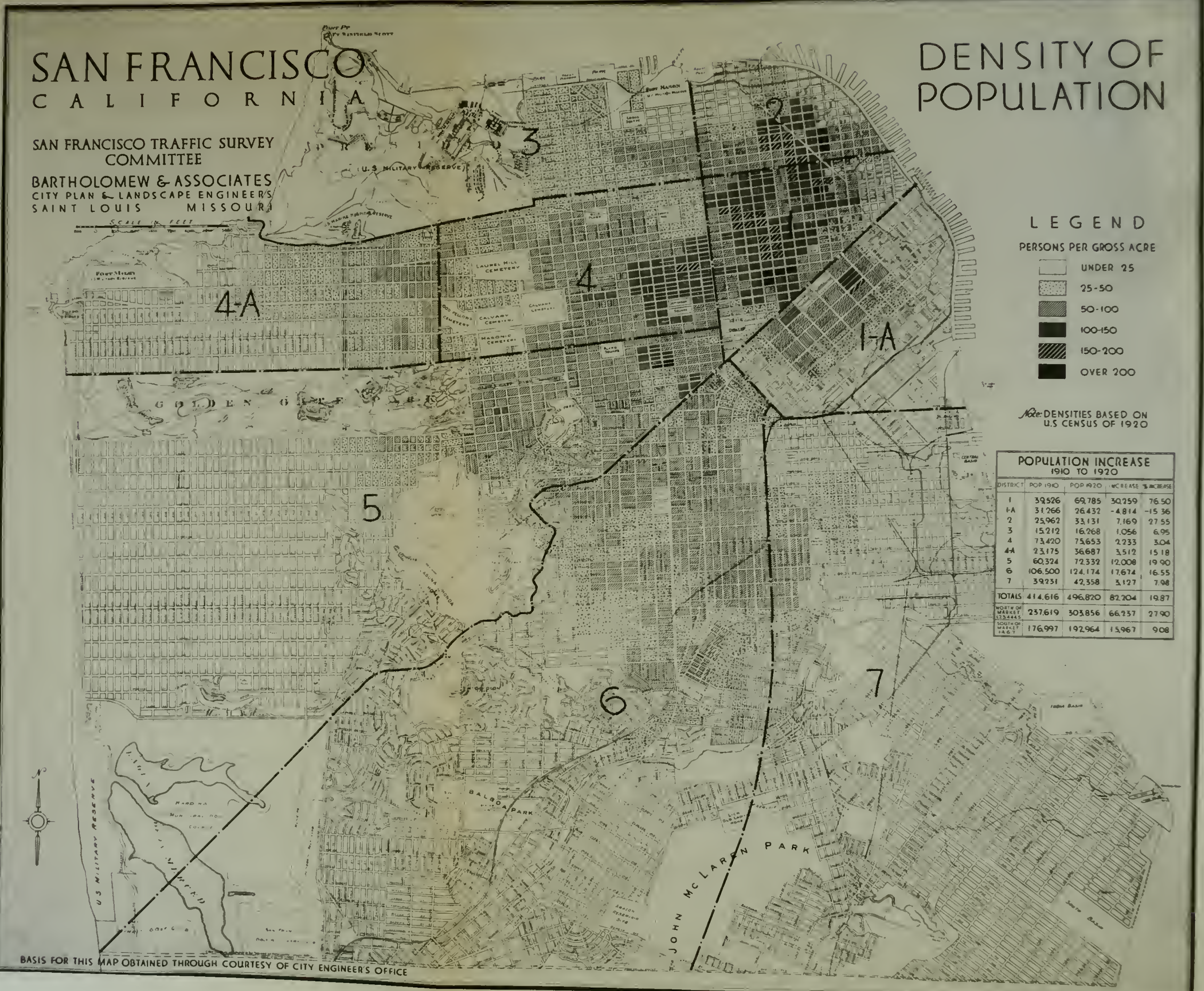
This study is introduced primarily to show how disregard of topography in the planning of streets has affected property values. Where grades are severe, traffic flows with great difficulty or not at all and private uses of land in districts afflicted with such grades suffer. Land reached by these streets loses a certain vitality derived from circulation and is practically useless for even ordinary residential use, regardless of proximity to important business or industrial centers or other property of much higher value. From an economic standpoint this state of affairs is deplorable, for huge sums are spent in futile efforts to make street grades more endurable and in taxes on hundreds of acres of property condemned to lie unused for generations. This is economic loss of serious proportions in a city built upon a restricted site.

PART THREE

GROWTH OF THE CITY

In a study of San Francisco circulation problems, it is essential to know how the city grows. Maps have been made showing the manner in which the increases of population and the expansion of industry and business are cared for. These facts have a bearing upon the volume and direction of traffic flow and upon the need for a system of through traffic arteries.

PLATE 6



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SAN FRANCISCO TRAFFIC SURVEY COMMITTEE

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DENSITY OF POPULATION

LEGEND

PERSONS PER GROSS ACRE

- ☐ UNDER 25
- ░ 25-50
- ▒ 50-100
- ▓ 100-150
- ▨ 150-200
- ■ OVER 200

Note: DENSITIES BASED ON U.S CENSUS OF 1920

POPULATION INCREASE
1910 TO 1920

DISTRICT	POP 1910	POP 1920	INCREASE	% INCREASE
1	39,526	69,785	30,259	76.50
1-A	31,266	26,432	-4,814	-15.36
2	25,962	33,131	7,169	27.55
3	15,212	16,268	1,056	6.95
4	73,420	75,653	2,233	3.04
4-A	23,175	36,687	3,512	15.18
5	60,324	72,332	12,008	19.90
6	106,500	124,174	17,674	16.55
7	39,231	42,358	3,127	7.98
TOTALS	414,616	496,820	82,204	19.87
NORTH OF MARKET 1.2.3.4.4-A.5	237,619	303,856	66,237	27.90
SOUTH OF MARKET 1-A.6.7	176,997	192,964	15,967	9.08

BASIS FOR THIS MAP OBTAINED THROUGH COURTESY OF CITY ENGINEER'S OFFICE

Plate Six

POPULATION DENSITIES

San Francisco, because of its hills and the rigid pattern of streets laid over them, has developed certain peculiarities of growth. Population is not spread evenly over the corporate area of the city. Concentration has been encouraged. The number of persons counted in mile circles drawn around Union Square will show the compact population conditions at the center. For comparison a table of these figures for San Francisco is given with similar ones for St. Louis and Cleveland.

CIRCLE	POPULATION WITHIN CIRCLE		
	S.F.(1920)	St.Louis*	Cleveland*
1 Mile Radius	125,475	54,900	34,200
2 " "	125,084	177,100	128,300
3 " "	128,458	201,300	179,500
4 " "	71,367	190,600	185,400
5 " "	29,611	98,000	156,900
Over 5 Miles	16,825	237,200	239,800
Total	496,820	959,100	924,100

*Dates of population figures for St. Louis and Cleveland are not available.

The tendency to cling to the center has produced population densities that are unique among California cities.

A spreading city having single family residential characteristics with population densities rarely exceeding 75 per acre and averaging below 40 is considered typical of the state. In San Francisco densities above 200 are found and hundreds of blocks show an average above 100 per acre. The high density blocks are shown on the diagram. The boundaries of several high density districts - together with the densities are as follows:

Leavenworth, Jones, Ellis, O'Farrell - - - 310
Leavenworth, Jones, Eddy, Ellis - - - - - 270
Filbert, Vallejo, Kearny, Grant - - - - - 234

If the tendencies to concentration continue, the traffic demands upon existing streets will in time exceed their capacity, for the ownership of vehicles is increasing and the life and activities of the city are becoming more and more dependent upon theability of these behicles to move upon the streets. The tightness of city growth in the districts of high population density is already forcing a development of more remote areas, all of which must be reached by adequate major traffic routes and properly connected by these arteries with dominant business and industrial centers.

PLATE 7

SAN FRANCISCO
CALIFORNIA

SAN FRANCISCO TRAFFIC SURVEY
COMMITTEE

BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
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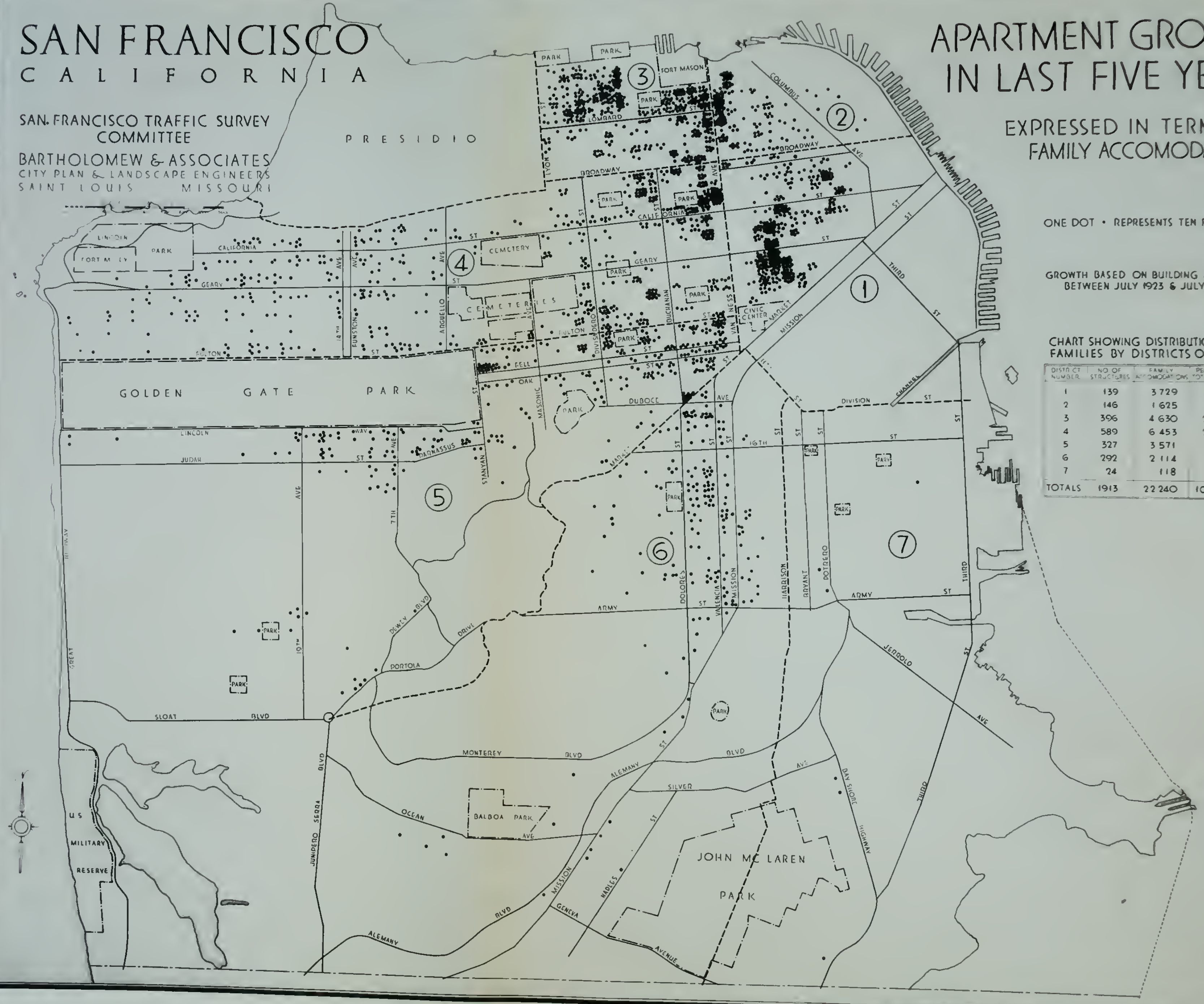
APARTMENT GROWTH IN LAST FIVE YEARS

EXPRESSED IN TERMS OF FAMILY ACCOMODATIONS



ONE DOT • REPRESENTS TEN FAMILIES

GROWTH BASED ON BUILDING PERMITS
BETWEEN JULY 1923 & JULY 1928

CHART SHOWING DISTRIBUTION OF FAMILIES BY DISTRICTS ON MAP

DISTRICT NUMBER	NO OF STRUCTURES	FAMILY ACCOMODATIONS	PER CENT OF TOTAL FAMILIES
1	139	3 729	16 77
2	146	1 625	7 31
3	396	4 630	20 81
4	589	6 453	29 03
5	327	3 571	16 05
6	292	2 114	9 50
7	24	118	0 53
TOTALS	1913	22 240	100 00

Plate Seven

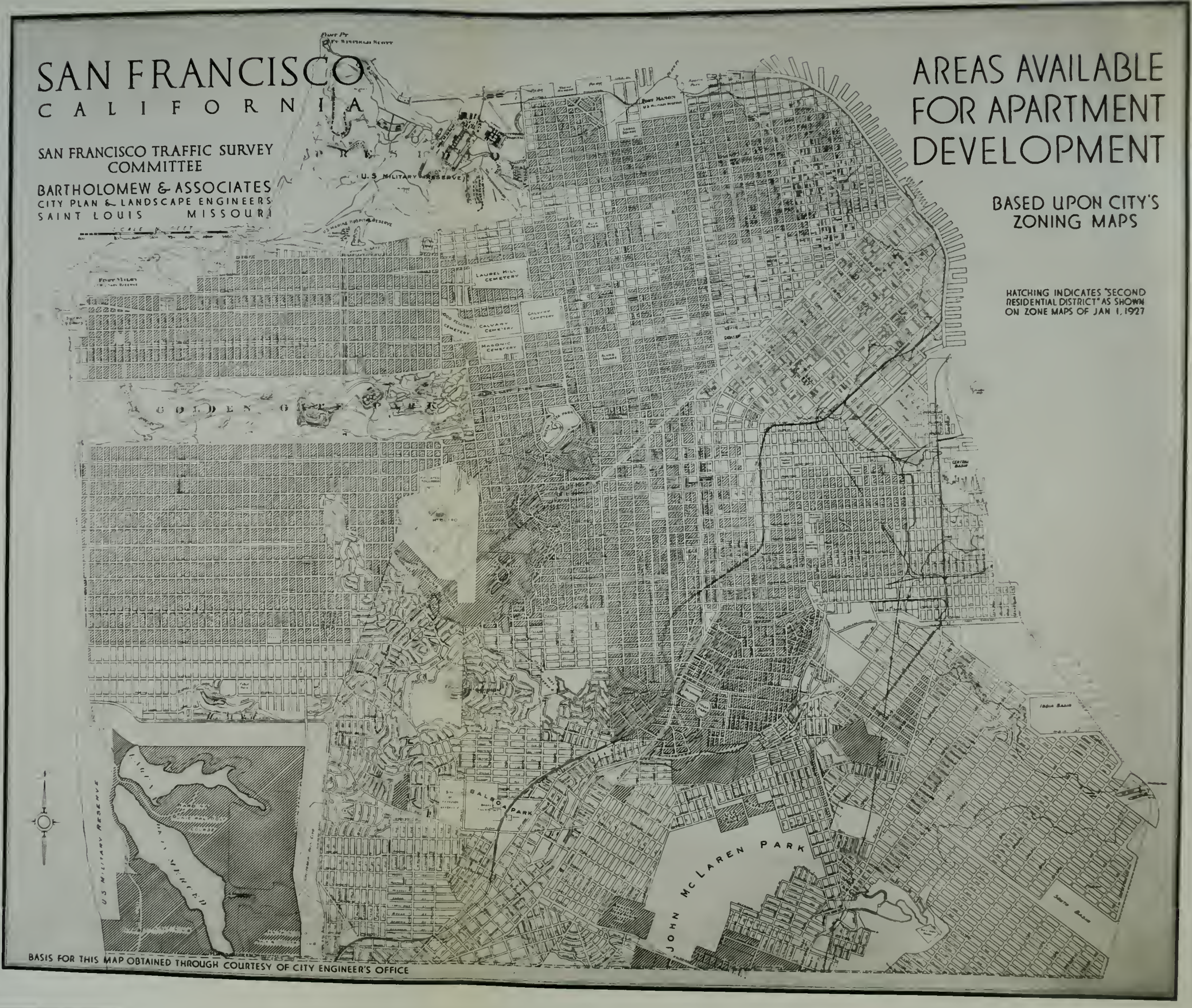
APARTMENT CONSTRUCTION AND TRENDS

The map opposite shows apartment growth in terms of family accomodations. The lack of population figures since 1920 has made it necessary to use this method of indicating the trend of development in recent years. Here is a simple forecast of future traffic volume and a suggestion of its origin. The Marina District is fast filling up with a moderate height type of apartment producing a population density above 100 persons per acre. Most of these people require the services of vehicles using the streets. The numbers will increase in future years and traffic in most American cities is known to grow four times in volume when the population doubles. By what routes will the daily flow of vehicles to and from a single district like the Marina be conducted to the warehouse sections of the city, the office buildings, the shopping center, the industries?

In a great, newly developing region like the Richmond District, which in the last five years added 29 percent to the family accomodations provided in apartments, the problem of developing routes for future traffic movement is not solved by merely having all streets alike. The primary arteries by which all districts are reached must be distinctively marked and plans must be drawn to give them the traffic capacity which the growth of population warrants. It must be remembered that most of the streets that are doing service today were laid out

three generations ago when there was no such complexity in the traffic stream, slower speeds prevailed and city life depended to a notably lesser degree upon vehicular circulation on the streets.

PLATE 8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CALIFORNIA
SAN FRANCISCO TRAFFIC SURVEY COMMITTEE
BARTHOLOMEW & ASSOCIATES
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AREAS AVAILABLE FOR APARTMENT DEVELOPMENT
BASED UPON CITY'S ZONING MAPS
HATCHING INDICATES "SECOND RESIDENTIAL DISTRICT" AS SHOWN ON ZONE MAPS OF JAN 1, 1927
PRESIDIO
U.S. MILITARY RESERVE
FORT MASON
LAUREL HILL CEMETERY
CALVARY CEMETERY
MASONIC CEMETERY
ODD FELLOWS CEMETERY
GOLDEN GATE PARK
BALBOA PARK
JOHN McLAREN PARK
U.S. MILITARY RESERVE
LAKE MERCED
INDIA BASIN
CENTRAL BASIN
SOUTH BASIN
BASIS FOR THIS MAP OBTAINED THROUGH COURTESY OF CITY ENGINEER'S OFFICE

Plate Eight

AREAS AVAILABLE FOR APARTMENT DEVELOPMENT

This diagram shows the tremendous area of San Francisco set aside in the present zoning ordinance for multi-family dwellings. If one may assume that the higher population densities previously revealed in Plate Six are eventually to be spread over the territory shown on this map, there are grounds for doubting the ability of the present street system to meet the requirements of traffic. This is especially true of those remote apartment districts, like the Sunset, which is accessible now only through a narrow bottleneck between Golden Gate Park and the Affiliated Colleges.

The necessity for the zoning of such large apartment districts at a distance from the centers of business and industrial life is open to serious question, but since the prospect of a large population here has been set up, the design of the major street system must be adjusted to it. The Sunset District at population densities allowed by present zoning and prevalent in similar districts already developed will contain upwards of 190,000 persons when fully built up. The present arrangement of streets in the district and leading to it is poorly adapted to the traffic flow which this population will produce. In fact the present unsatisfactory means of reaching this district is in part responsible for its slow development.

PLATE 9

SAN FRANCISCO CALIFORNIA

MOTOR VEHICLE GROWTH

SAN FRANCISCO TRAFFIC SURVEY COMMITTEE
HARLAND BARTHOLOMEW & ASSOCIATES
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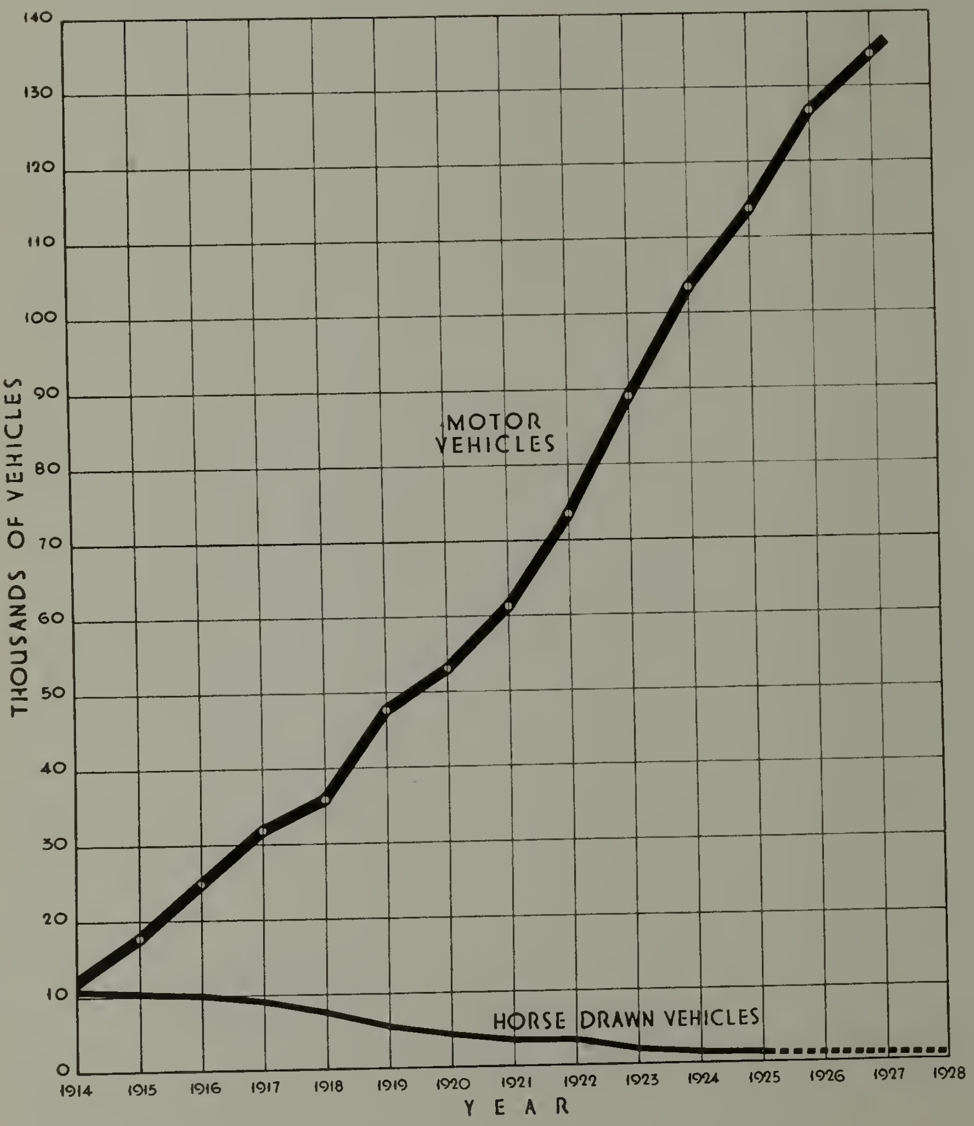


Plate Nine

MOTOR VEHICLE GROWTH

The curve of motor vehicle increase has a pertinent bearing upon street planning problems. The additional numbers of motor cars and trucks that come upon the streets each year as a result of population increase and the widening use of such vehicles, must be accomodated largely upon streets laid out many years ago. Garages and other buildings for the housing of motor cars have through private means come into the city in great numbers since the advent of the automobile, but circulation channels such as traffic streets have not been sufficiently provided by the city to meet changed traffic conditions.

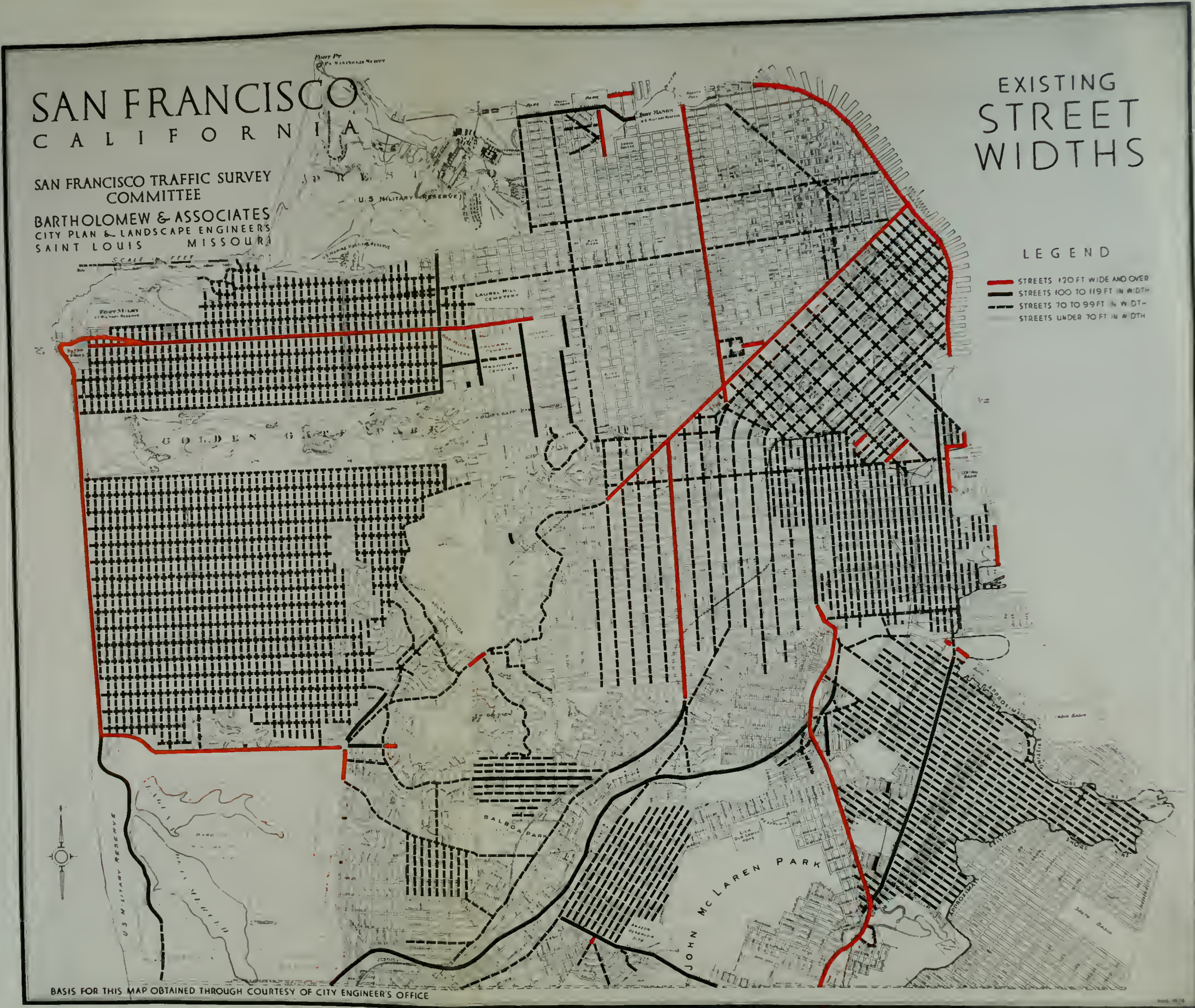
Automobile usage has increased in the past at a rapid rate and will increase in the future in ratios proportioned to population increase and per capita ownership. The daily use of all the additional vehicles will grow to a point where highway congestion becomes a handicap to civic development. It is the purpose of this report to point out the routes needed for the free circulation of traffic which will be denser than that of today.

PART FOUR

PRESENT STREET CONDITIONS AND USE

The present sluggishness of circulation in certain parts of San Francisco is due largely to faults in existing streets. The effects of street grades and the unwise adaptation of the street pattern to topographic conditions have already been noted. Here follows a more specific consideration of street widths, paving, street car routing, complicated intersections and other matters that contribute to or cause congestion.

PLATE 10



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EXISTING STREET WIDTHS

LEGEND

🟥 STREETS 120 FT WIDE AND OVER
▬ STREETS 100 TO 119 FT IN WIDTH
- - - STREETS 70 TO 99 FT IN WIDTH
— STREETS UNDER 70 FT IN WIDTH

BASIS FOR THIS MAP OBTAINED THROUGH COURTESY OF CITY ENGINEER'S OFFICE

Plate Ten

STREET WIDTHS

Street widths in San Francisco bear little realtionship to the volume or type of traffic using them. Plate Ten shows graphically the distribution and arrangement of streets of various widths. The lack of a systematic scheme of wide traffic thoroughfares, reaching all parts of the city, is obvious.

Fortunately, very wide streets do exist, such as Market, Van Ness, Geary and the Embarcadero, and they carry a large total volume of traffic. The excellency of Geary Street as a traffic route through the Richmond District is, however, impared by its narrow width from the Presidio to the business district. Other streets of great width, shown on the map, are so located as not to invite more than a small percentage of the vehicles which they could accomodate. These wide streets, however, can in some instances be made to serve much more effectively in the future as part of a major street plan.

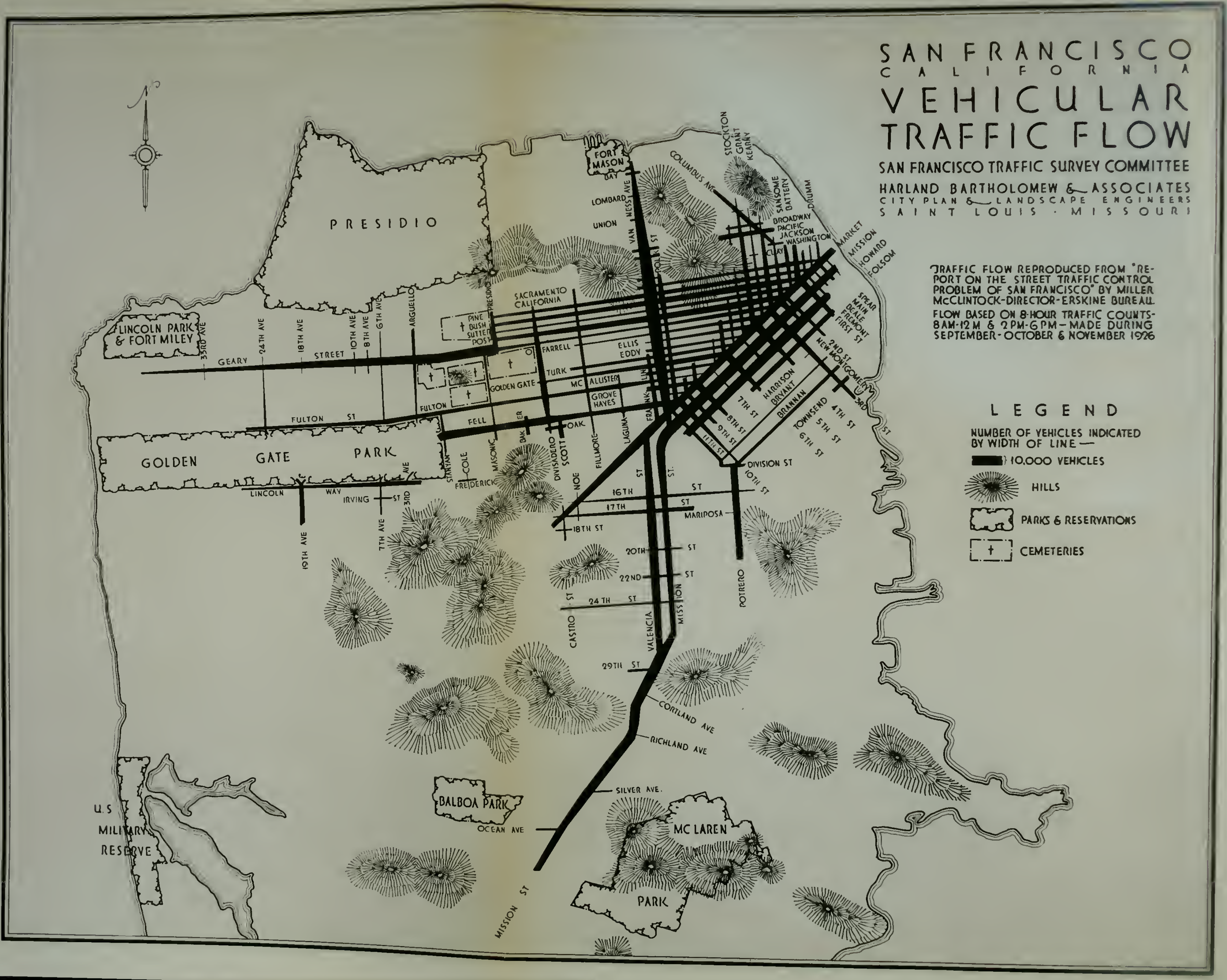
Three wide, so-called "boulevards", are now under construction: the Bernal Cut, Bayshore Highway, and Alemany Boulevard. These are not boulevards in the true sense, but should become tremendously important traffic thoroughfares, relieving to a marked degree the congestion which exists today in the southern section of the city.

The remarkable characteristic of the street width map is not so much the lack of extremely wide streets, as it is

the presence of so many streets which are 70 feet wide or more, covering whole districts. It is apparent that all of these medium wide streets cannot be used to carry heavy traffic. Other districts suffer from a total lack of wide traffic streets. The huge area just west of Van Ness Avenue has no street even seventy feet wide, with the exception of California and Broadway. Wide east-west streets are badly needed here.

There are many districts which have a tremendous number of wide streets, but it will be sufficient to cite the Sunset District as a typical example. Here are north and south streets 70 feet wide and east and west streets 80 feet wide. In this district 38.6 percent of the total area is devoted to streets. The normal proportion of street space in most American cities is 25 percent. It would be economy in such a tract to lay out certain wide traffic diagonals leading from north-east to south-west, and others crossing them, leaving all other streets narrow. As this area is still largely unpopulated, it is possible to resubdivide a small portion to obtain one necessary diagonal, such as is proposed later in Plate Twenty-two.

PLATE 11



SAN FRANCISCO
CALIFORNIA

VEHICULAR TRAFFIC FLOW

SAN FRANCISCO TRAFFIC SURVEY COMMITTEE

HARLAND BARTHOLOMEW & ASSOCIATES
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TRAFFIC FLOW REPRODUCED FROM "REPORT ON THE STREET TRAFFIC CONTROL PROBLEM OF SAN FRANCISCO" BY MILLER McCLINTOCK-DIRECTOR-ERSKINE BUREAU.

FLOW BASED ON 8-HOUR TRAFFIC COUNTS-8AM-12M & 2PM-6PM-MADE DURING SEPTEMBER-OCTOBER & NOVEMBER 1926

LEGEND

NUMBER OF VEHICLES INDICATED BY WIDTH OF LINE —

▬ 10,000 VEHICLES

HILLS

PARKS & RESERVATIONS

CEMETERIES

Plate Eleven

TRAFFIC FLOW

Topographical and other physical conditions of the city have had a definite effect on circulation. The concentration of population in the valleys and gentle slopes; the confinement of commercial development to flat areas; the tendency of traffic to seek the low levels and easy grades; and the excessive street grades resulting from the lack of adaption of streets to topography; have a combined influence on the traffic flow which is clearly revealed on the opposite chart.

The following table shows the volume of traffic at the principal gateways to the city for a typical week day, for 7:00 A.M. to 6:00 P.M.

GATEWAY	TOTAL VEHICLES
1. Skyline Boulevard	1,510
2. El Camino Real	13,272
3. Bay Shore Highway	3,520
4. Ferry Building	4,835
5. Hyde Street Ferry Slips	1,442
Total - - - - - -	24,579

In the traffic flow diagram the total volumes of traffic found on the principal arteries during the period of the check is shown graphically by widths of lines. The con-

centration of traffic on a few favorite routes and the failure of certain streets to attract travel are clearly revealed. The inherent tendency of traffic to seek the easy routes is illustrated by the manner in which the heavy radial flow on Geary Street is broken into three main parts at Presidio Avenue as it approaches the central district. This breaking up of such a large stream into several routes is typical of the lack of through, direct streets for radial flow.

Van Ness Avenue carries more traffic at the point of maximum flow (Bush Street) than any other street in the city. It is a splendid example of the function performed by a combined by-pass and distributor street. Due to its width and easy grade, it meets the present day demand satisfactorily.

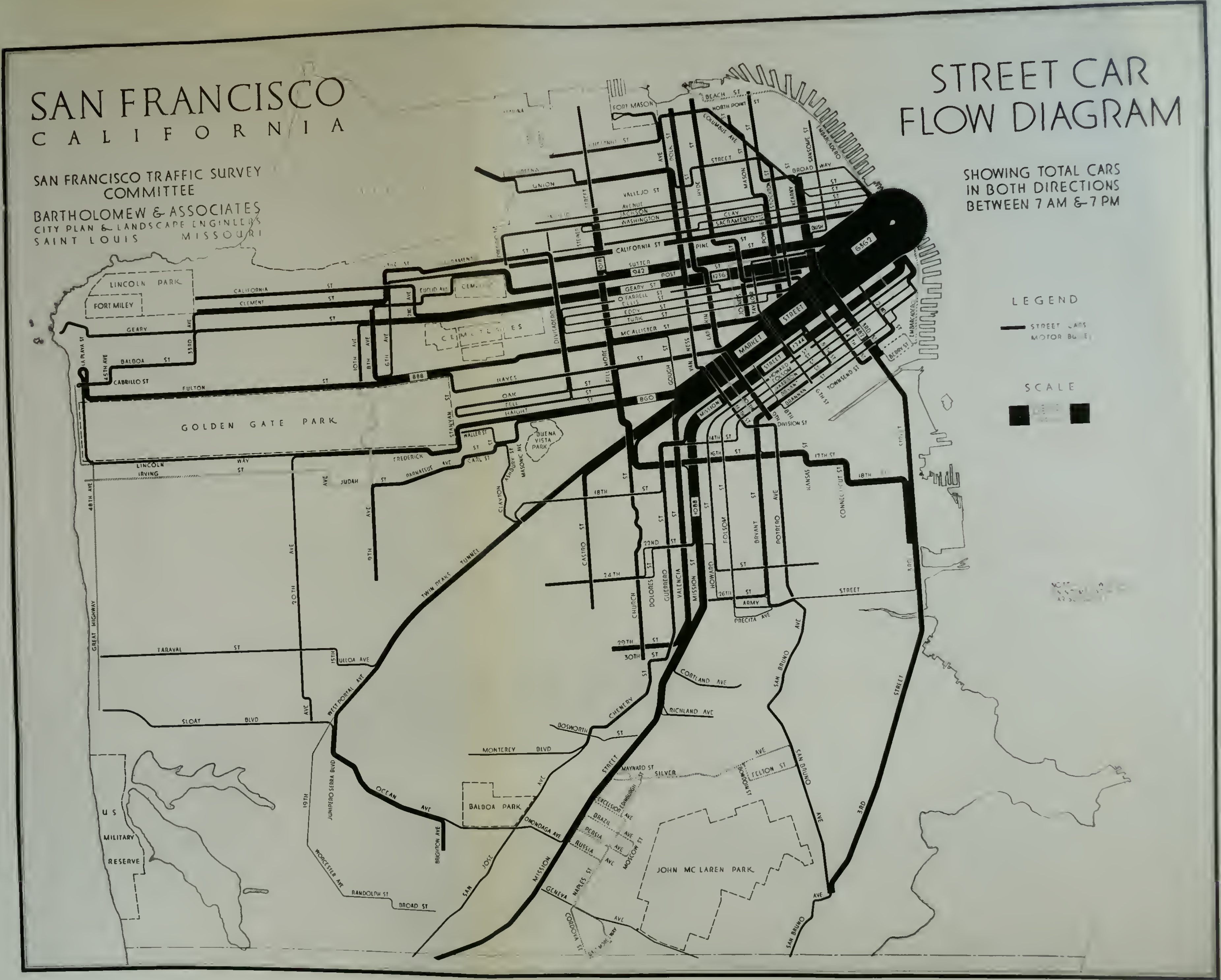
Distributor and by-pass streets should be created on all sides of the central business district.

The crosstown flow found on Scott Street at Oak Street is typical. It will be noted that very few cross town routes of major importance occur. Because of the lack of continuity of routes, this cross town movement is left to find its way as best it can. In zig-zag fashion it proceeds across and along those streets which largely because of easy gradient function as through routes.

A Major Street Plan should recognize all of the elemental flows which go to make up the traffic pattern. Pro-

visions should be made to care for radial, cross town, and by-pass movements. A major street system must be designed to satisfy the demands of travel with respect to location, volume and time. It should seek to provide through, continuous routes of easy grades suited to accomodate the interchange of traffic from any part of the city to any other part.

PLATE 12



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STREET CAR FLOW DIAGRAM

SHOWING TOTAL CARS
IN BOTH DIRECTIONS
BETWEEN 7 AM & 7 PM

LEGEND

STREET CARS
MOTOR BUSES

SCALE

Plate Twelve

TRANSIT FLOW

The first street railway in San Francisco was built in 1860 by the San Francisco Market Street Railroad Company, afterwards the Market Street Railroad Company. This road ran on Market from California Street to the Mission Dolores, and was first operated under steam dummy power and later by horses. Competing lines soon started, cable lines became popular and profitable, until in 1893 seventeen separate and distinct companies were operating street railways on San Francisco streets. Such frenzied activity produced duplication of service. In spite of later consolidations this fault has persisted. Duplication is uneconomical and impedes the movement of automobile traffic. It is difficult to understand how San Francisco can afford to pay the price of perpetuating this condition.

Street car flow on a usual week day is shown by the diagram. The width of line on any street represents the total number of cars using that street between the hours of 7:00 A.M. and 7:00 P.M. Market Street is seen to be the focal point of most of the car flow. Tributary lines feed into Market from all directions. The daily number of cars flowing between Sutter and the Ferry Building is 6362, or an average of 133 cars per track per hour in each direction. During peak hours cars operate on a headway of approximately

20 seconds. Other radial streets carrying a large number of cars are Mission, Geary, Sutter and Haight, of which Mission is the heaviest. Headways are about one minute during the peak. Kearny and Third carry the heaviest crosstown flow in the business district, while in the outlying sections Fillmore, Sixteenth and Divisidero are the crosstowns with the heaviest loads.

The diagram illustrates the duplication of street car service. Every street south of Market and parallel to it as far as Brannan is given over to transit, although there is very little flow on Howard, Folsom and Harrison. North of Market are also many adjacent east - west streets each of which carries a small flow. Many of these streets have a single track in the middle of the roadway. The central car line confuses traffic, as it is responsible for an uneven line of vehicles. There is also danger attendant upon the movement of a one-way car on a street which is carrying traffic in both directions.

Car line streets are not efficient carriers of automobile traffic. To move a large number of vehicles great widths are necessary, which often prove a serious impediment to cross traffic flow and pedestrian movement. Proper street and transit design aims toward the securing of traffic ways free of street cars paralleling the car line streets. Before it is possible to obtain this desirable condition in San Francisco, there will have to be a consolidation of lines to remedy the present duplication. This should be done only as

the result of a thorough transit study made from the standpoint of economy and city planning. Unless action such as this is taken, the street plan should not be expected to operate at a high point of efficiency for vehicular travel.

PART FIVE

A MAJOR STREET PLAN FOR SAN FRANCISCO

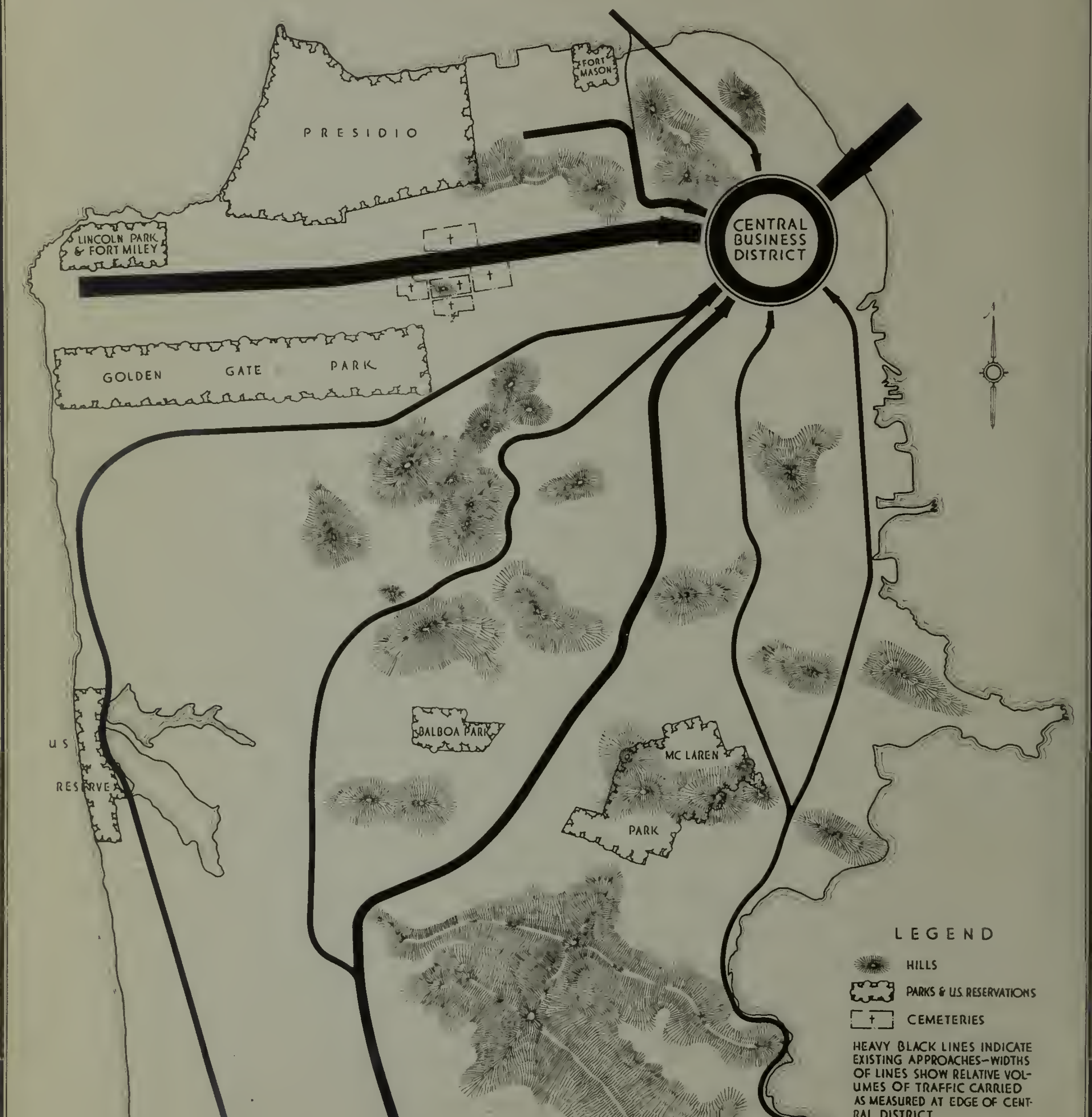
A complete plan for the direction of city growth along scientific lines would pay for itself every year if consistently followed. San Francisco has no such plan, but in this report is presented a basic highway scheme upon which such a plan can be built. In the section following there is offered a sound practicable guide for the development of a system of wide, direct, continuous arteries providing adequate circulation in all parts of the city.

PLATE 13

BARRIERS & APPROACHES TO CENTRAL BUSINESS DISTRICT

SAN FRANCISCO CALIFORNIA

THE SAN FRANCISCO TRAFFIC SURVEY COMMITTEE — BARTHOLOMEW & ASSOCIATES — CONSULTANTS



HEAVY BLACK LINES INDICATE EXISTING APPROACHES—WIDTHS OF LINES SHOW RELATIVE VOLUMES OF TRAFFIC CARRIED AS MEASURED AT EDGE OF CENTRAL DISTRICT

Plate Thirteen

TRAFFIC MOVEMENT DIAGRAM

The heavy concentration of both wholesale and retail business in s small area and the massed population adjacent, join in the creation of an extraordinary focal point for traffic. There are other centers in the city which are important traffic objectives, but this one is clearly dominant.

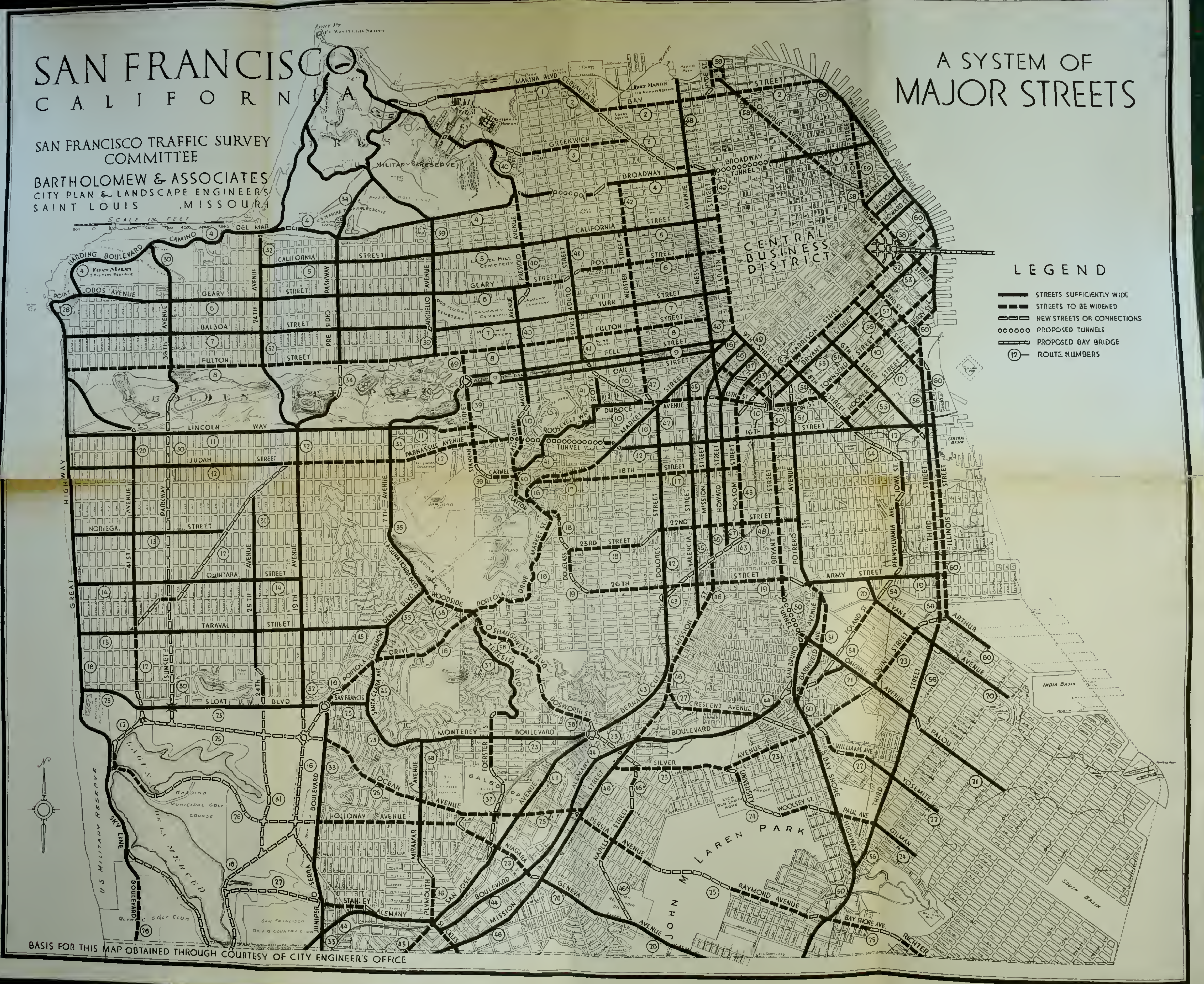
Vehicles in increasing numbers seek highways leading to this central business district. They come from across the bay by ferry, 8874 being a recent daily total, with additional numbers using the Dumbarton Bridge and the peninsula highways. An enormous volume derived from the western apartment districts moves on Geary and the other parallel streets, as indicated by a single heavy line on the diagram. The flow from down the peninsula enters via Third Street or Mission.

None of these routes, however, has been developed for the service which highways so located should render in the conduct of a heavy flow of modern high speed vehicles. There are faults and deficiencies in each, inherited in practically every case, however, from a generation which had no way of forecasting present-day traffic requirements. The widths of lines on the diagram indicate relatively the attractiveness of the routes. The districts tapped by the narrow lines are not well populated and the routes themselves are lightly used because of the barriers to the free flow of traffic.

One of the first objectives of the Major Street Plan is to open up and clear all these primary arteries, to enlarge their

ability to carry increasingly heavier traffic loads into and out of the central business district. The valuations of property already established in this district and the businesses being conducted there now are dependent to a greater degree than many realize upon the maintenance of these channels. They must be kept in proper condition at all times as to width, connections, paving, lighting and traffic regulation, in order to perform the important service which they are called upon to render. The major street plan indicates all the streets which require such special attention.

PLATE 14



SAN FRANCISCO CALIFORNIA

A SYSTEM OF MAJOR STREETS

SAN FRANCISCO TRAFFIC SURVEY COMMITTEE

BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
SAINT LOUIS MISSOURI

BASIS FOR THIS MAP OBTAINED THROUGH COURTESY OF CITY ENGINEER'S OFFICE

Plate Fourteen

MAJOR STREET PLAN

The foregoing studies, together with other data of a similar nature, have been prepared as the basic groundwork for the major street plan. As far as possible, all the factors which have in the past affected city growth and traffic flow have been studied and future conditions have been predicted in order to determine the composition and scale of the major street plan. The plan is a comprehensive scheme of inter-connected routes upon which the main traffic streams of the future city will flow.

The scheme is composed almost wholly of existing streets. It partakes, consequently, of many of the shortcomings of the present street pattern. The ruggedness of the site makes the selection of easy grade routes between certain districts extremely difficult. In some sections the present block arrangement is opposed to the lines of traffic flow and no street can be found that is altogether satisfactory as to width, direction and grade for inclusion in a system of heavy-duty thoroughfares.

The major street plan, therefore, has some gaps in it and is not to be considered as a representation of the sort of a system of arterial thoroughfares that San Francisco might have had if a system of major streets had been planned fifty or seventy years ago. The plan, however, does make proposals for putting many existing thoroughfares to more effective use. It will be of great service in directing attention to the need

of coordinative street improvements. Here the aim is to suggest street openings, widenings and extensions which will produce maximum returns. The major street plan is to a certain degree a guarantee that the public will derive full value from investments in large-scale street improvement projects.

There is no intention, however, of throwing a heavy burden of expense upon the taxpayers. The proposals of the major street plan are for consideration as need arises. It is not recommended that all the work of creating these new arteries be done at once. The few projects that seem to require immediate attention, because of urgent present need or possibility of economy are considered separately in Plate Seventeen.

The plate opposite is designed to show the general composition of the major street system and to indicate the nature of the improvements needed to bring the entire system into service. The system is made up of three types of streets.

1. Radial routes, wide direct arteries leading primarily to the business center from every quarter of the city and from the peninsula.

2. Cross-town routes affording traffic an opportunity to go directly, and as near as possible in a straight line, from one part of town to another. In general the aim has been to keep these cross-town routes approximately one-half mile apart but the grades and existing arrangement of streets has not made it possible to hold this uniform pattern.

3. By-pass routes diverting traffic from or carrying it around congested centers and in some cases distributing it equally into the center.

Space will not permit a complete description of the entire plan. Such a description is found in the Appendix. Only a few of the principal features will be noted here.

Radial Streets

Columbus Avenue and the proposed bay bridge, located at the Rincon Hill site, are the main approaches for traffic from Marin County and the East Bay respectively. The bay bridge will discharge traffic into the south side of the business district. The special arrangement of streets to be considered in connection with the opening of the bridge is discussed more fully in Plate Twenty-one.

Bryant Street carries the peninsular traffic from the Bayshore Highway and the Alemany into the south side of the business district. In order to do this Bryant is extended from its southerly terminus to San Bruno Avenue by a tunnel. Potrero, paralleling Bryant, also will carry traffic from the Bayshore and the Alemany. Industrial traffic from the peninsula can leave the Bayshore and proceed northward via Third Street, which parallels the waterfront. Additional peninsular traffic will enter the city by the Alemany, San Jose Avenue and Mission Street. Proceeding toward town these traffic streams will be led by a diagonal from Dolores to Folsom into four southern entries to the business district - namely: Valencia, Mission, Howard and Folsom. The main volume of northbound travel on Mission and the Bernal Cut will be concentrated on Dolores and thence into Folsom via the diagonal street.

Skyline Boulevard is connected to a diagonal street through the Sunset district. This diagonal extends to Judah at 20th Avenue. Judah and Parnassus are extended by a tunnel into 16th Street. This gives traffic from the Peninsula and the Sunset District the choice of utilizing Market or proceeding on 16th Street. Sixteenth will distribute the vehicles bound for the business district into the four southern radials mentioned above. Vehicles having the industrial district as their destination can continue on 16th to the Embarcadero or to some industrial street en route.

The connection of Geary Street to Post at Divisadero, and the widening of Post Street to Larkin will give a wide radial upon which the majority of the traffic will flow from the Richmond District to the western distributor street of the business district. A diagonal as a radial for the intensively built-up Marina District will collect traffic from Cervantes and Greenwich and lead it to Van Ness, Larkin or Broadway, which are business district feeder streets.

Crosstown Routes

Van Ness Avenue is a crosstown route. It is connected south of Market to 11th Street and extended to Howard in order to function as a by-pass for the business district. Traffic north-bound on Market, Mission, Howard, Folsom and Bryant, which is not destined downtown will flow into Van Ness and by-pass the central district.

Webster and Divisadero are crosstown routes connecting Duboce and 13th Street. These are supplemented by other cross-

town lines at more or less regular intervals further west in order to facilitate much needed cross circulation of traffic. Routes such as these reduce the time of delivery traffic and other interdistrict travel. In the southern part of the city are a series of crosstowns extending between the bay on the east and western residential portions of the city. Ocean Avenue is connected westerly across the Spring Valley holding to 41st Avenue. It is connected easterly to Persia and Raymond leading to the waterfront which will ultimately be developed on the bay side of the city.

By-pass and Distributor Streets

No extensive improvements are shown within the business district. It is felt that traffic will be carried into certain distributor streets from the main radials, and then will spread itself along these distributors, entering the business district on numerous streets. Larkin is the distributor on the west, relieving Van Ness of that duty which it performs now. Harrison is the distributor on the south. The street plan has purposely been designed to offer traffic easy routes from the north, south and west sections of the city to the south side of the business district. On the north the Marina District traffic can flow by Broadway and Columbus into the lower section or south side of the district. Broadway traffic originating west of Van Ness can utilize the same route. From the south all the radials offer easy traffic communication with the South-of-Market section. The tunnel joining Parnassus to 16th and the diagonal from the Panhandle to Duboce offer two

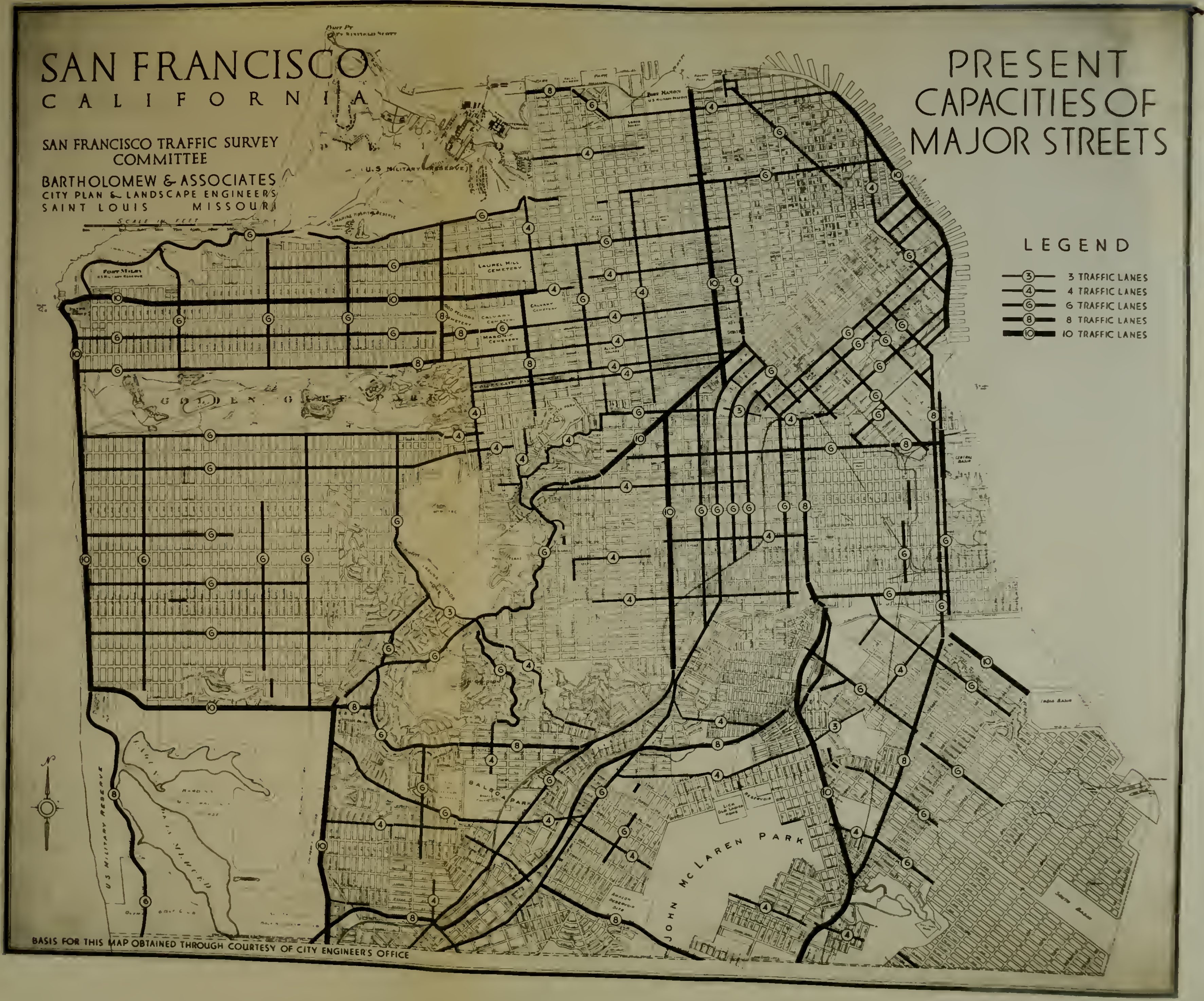
routes to the south side of Market for travel originating in the western sections of the city.

The southerly extension of the Embarcadero is necessary for industrial expansion. For this extension Berry, a short length of Third, Illinois and Arthur Streets are used. The improvement should be similar to the present Embarcadero, except that a central curb should separate traffic streams. This route will relieve Third Street of much of the trucking which it would otherwise carry. A new bridge is needed across the channel on Third Street to replace the existing structure, and this should be sufficiently wide to prevent the creation of a bottle-neck here. A bridge is also needed across Islais Creek Channel. From this point the Embarcadero should proceed in a southerly direction - always contiguous to the waterfront. This extension is not shown and the route cannot be determined until a comprehensive, well-studied plan for the development of Hunters Point District has been adopted.

The plan recommended totals 188 miles of streets of which there are 47 miles to be widened and 28 miles to be opened. Streets which are sufficiently wide total 113 miles. The streets which are shown to be of sufficient width are ready for use now as traffic arteries. Many of them will need merely repaving and a widening of the roadway. Streets designated for widening can be given increased traffic capacity for the time being by curb set-backs and prohibition of parking. A preservation of the street frontage for future widening should be obtained, however, by establishing building set-back lines.

All these and other devices for carrying out the plan will be taken up fully in a supplementary study and be included in a later report.

PLATE 15



SAN FRANCISCO
CALIFORNIA

SAN FRANCISCO TRAFFIC SURVEY COMMITTEE

BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
SAINT LOUIS MISSOURI

PRESENT CAPACITIES OF MAJOR STREETS

LEGEND

- ③ 3 TRAFFIC LANES
- ④ 4 TRAFFIC LANES
- ⑥ 6 TRAFFIC LANES
- ⑧ 8 TRAFFIC LANES
- ⑩ 10 TRAFFIC LANES

BASIS FOR THIS MAP OBTAINED THROUGH COURTESY OF CITY ENGINEER'S OFFICE

Plate Fifteen

PRESENT CAPACITIES OF MAJOR STREETS

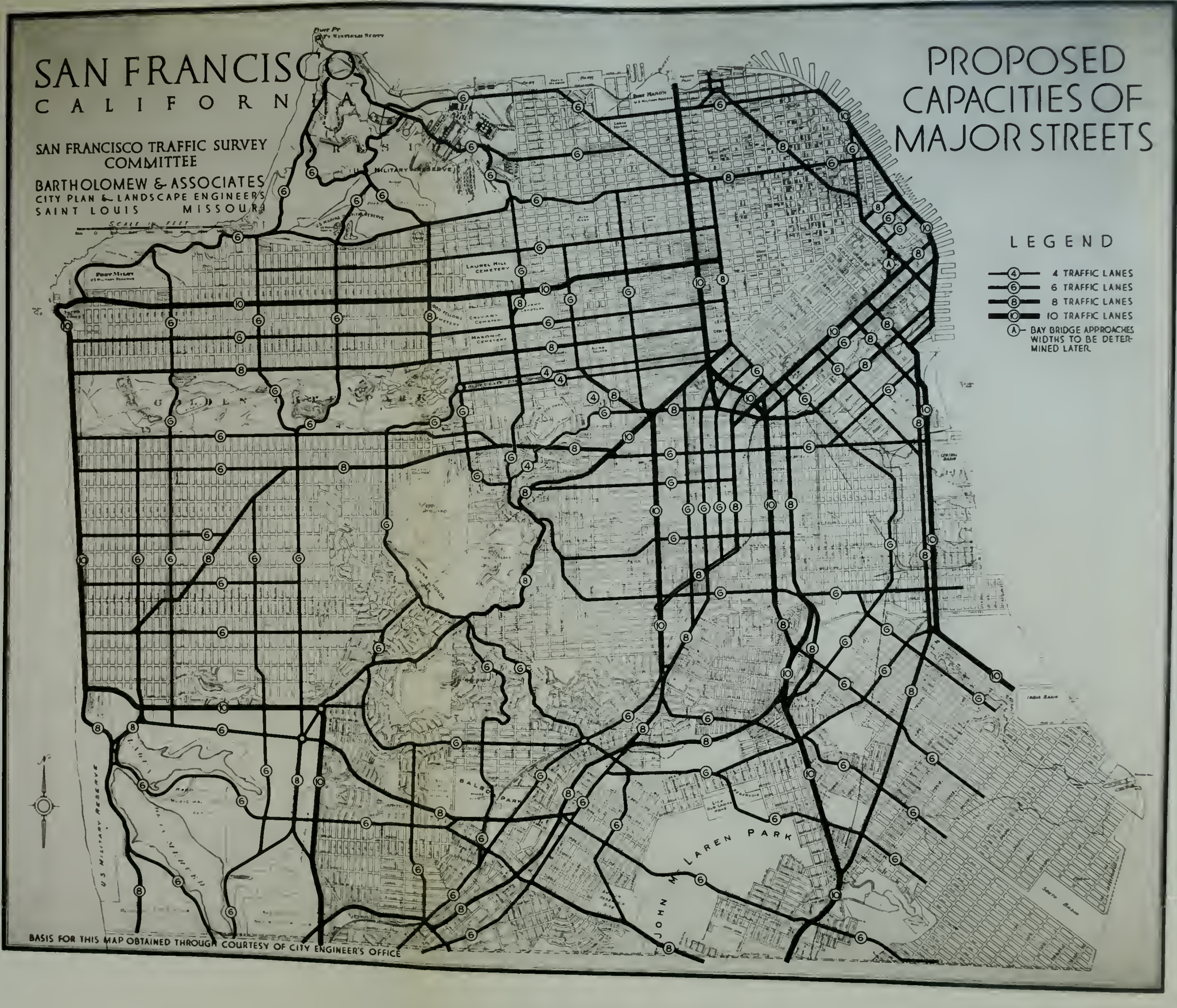
The Major Street Plan, Plate Fourteen presents a system of interconnected routes. Besides being continuous these streets must have adequate capacity for carrying traffic.

The present capacities of all existing streets used to form the major street plan are shown here. The capacities are designated in lines of vehicles, it being the assumption that the modern highway, operating at full capacity will accommodate a line of vehicles for every 9 feet of its width. A more complete discussion of street and roadway widths will appear in Plate Nineteen.

In this plate the maximum capacity of the street is shown regardless of the capacity of the existing roadway. For example; a street 82.5 feet wide is shown as a 6 line thoroughfare, although the width of the pavement at the present time may accommodate only 4 lines. The roadway can be widened to 6 lines at any time should the volume of traffic warrant.

The lack of orderliness in street widths, as stated in Plate Ten, is revealed, more or less, in the streets forming the major thoroughfare scheme. A study of this map together with the map in Plate Sixteen will give a comparison between present and proposed capacities, and show the gaps in the existing system of streets which must serve as major arteries.

PLATE 16



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PROPOSED CAPACITIES OF MAJOR STREETS

LEGEND

④	4 TRAFFIC LANES
⑥	6 TRAFFIC LANES
⑧	8 TRAFFIC LANES
⑩	10 TRAFFIC LANES
Ⓐ	BAY BRIDGE APPROACHES WIDTHS TO BE DETERMINED LATER

BASIS FOR THIS MAP OBTAINED THROUGH COURTESY OF CITY ENGINEER'S OFFICE

Plate Sixteen

PROPOSED CAPACITIES OF MAJOR STREETS

A comparison of this map with the one immediately preceding will show graphically the changes recommended in the capacities of major streets. At the junctions of main vehicular streams, traffic bottle necks are avoided only by making capacities ample.

The widest routes on the plan are shown as ten lines, although the present Embarcadero and a portion of the Great Highway have greater capacities. It is an established fact that the carrying ability of a traffic street will increase as its designated capacity increases up to 8 lines. Certain special streets, such as distributors should have additional lines for turns and storage spaces at signal controlled crossings. The ten line streets should be first constructed for 8 lines with wide walks - and the extra width converted into additional roadway space when needed.

No major street has a designated capacity of less than 4 lines, and it is advisable to prohibit parking on all 4 line streets to assure sufficient capacity for moving lines of vehicles. No car line street is less than 6 lines - and this capacity is exceeded on all streets where it is thought street car flow will ever be heavy.

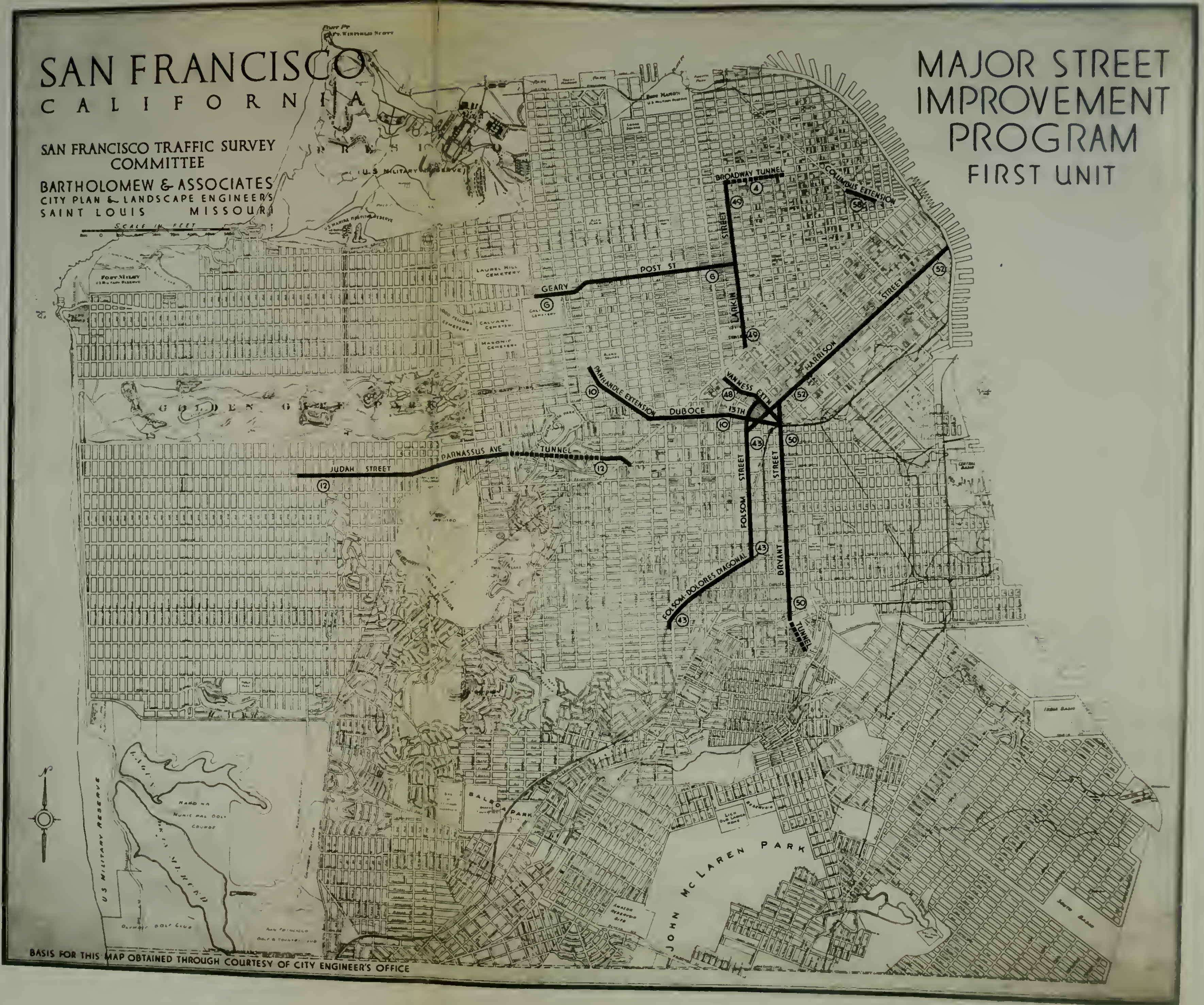
Plate Fourteen reveals that 60 percent of the major street plan is composed of existing streets which do not need to be widened. That means that 60 percent of the designated

capacities can be obtained with no widening of the streets. Setting back curbs to increase the width of roadways is the means by which the desired capacities are obtained.

It is important here to note briefly the manner in which capacities of the remainder of the existing streets used in the plan may be obtained. It should be explained first that the number of lines denoting the capacity of any street is made up of moving lines and standing or parked lines. A street car street has its two central lines devoted to street cars. In advance of widening then, two methods suggest themselves for increasing capacity; namely, the abolition of parking and the removal of car lines.

Should these methods fail to give the desired relief from congestion on streets the roadway may next be widened by setting back curbs. Finally, as a last resort the street must be widened, or building set back lines established to preserve it for future widening.

PLATE 17



BASIS FOR THIS MAP OBTAINED THROUGH COURTESY OF CITY ENGINEER'S OFFICE

Plate Seventeen

MAJOR STREET DEVELOPMENT PROGRAM

A Major Street Plan once adopted by a city can be used as a guide for future growth, preventing a recurrence of mistakes which will later be costly to correct. Functioning in this capacity the value of a plan to the city is almost immeasurable.

A beginning, however, should be made by San Francisco to utilize portions of the plan in a corrective way, for although the city cannot now afford to open and widen all the streets recommended on the plan, certain improvements are needed at once. From time to time groups of street openings and widenings as units must be selected and accomplished. It is not difficult to pick out things which nned to be done--but the choice of the component parts of a unit should be made with a view to answering certain questions:

1. Do the various parts of the unit bear a definite relationship to each other?
2. Do they benefit generally all sections of the city?
3. Can the community afford to pay the cost?

The improvements shown on the map as the first unit of the plan were selected for a definite reason; to facilitate radial flow from all quarters of the city to the business district - and more particularly to the south of Market district. An explanation of how this will be accomplished is as follows. (The numbers mentioned and shown on the map correspond with the route numbers on the major street plan)

1. Route 4, the Broadway tunnel and Route 58, the Columbus Avenue extension to Front Street will give a continuous thoroughfare from Van Ness Avenue to the south of Market and to the lower end of the present business district. This route will invite traffic from the northern sections of the city.

2. Route 6, Geary-Post Street, will provide a thoroughfare for radial flow from the west.

3. Route 49, Larkin Street, will allow the traffic from the west to distribute itself and enter the business district on several streets.

4. Route 10 will carry western traffic to the south of Market district. It will also open up a delivery route between the north and west districts and the business district.

5. Route 12 will provide a direct radial from the Sunset District to the business district. This will also be a delivery route.

6. Routes 43 and 50 will bring the peninsular traffic and other southern traffic into the south side of the business district.

7. Route 48 will by-pass into Eleventh Street the southern traffic not bound for the business district.

8. Route 52 will distribute routhern and western traffic into the south side of the business district.

In addition to these improvements, designs for preventing traffic confusion should be made for the following intersections:

1. North end of Bernal Cut at Mission and Dolores

2. South end of Bernal Cut at the junction of San Jose and Monterey Boulevard.

3. The intersection of Sloat Boulevard and Junipero Serra.

A discussion of the physical improvements is given in Plate Fourteen. Detailed plans for some of the projects are shown in Plate Eighteen-A and Eighteen-B. Plans for the remain-

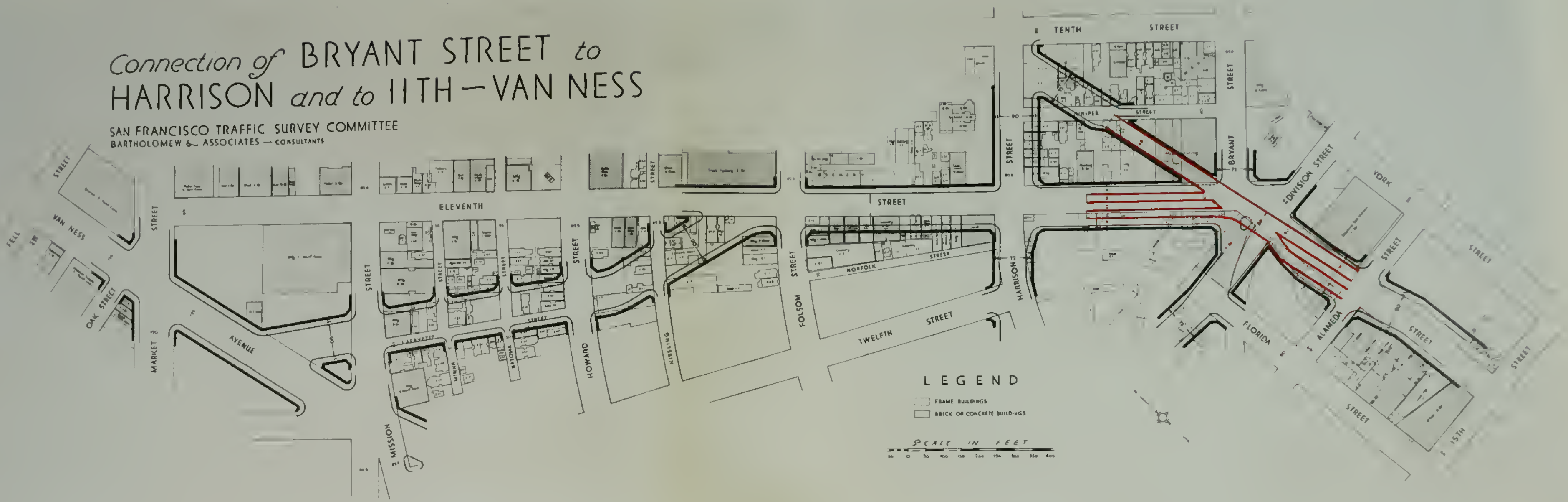
ing improvements and cost estimates for the whole must be prepared.

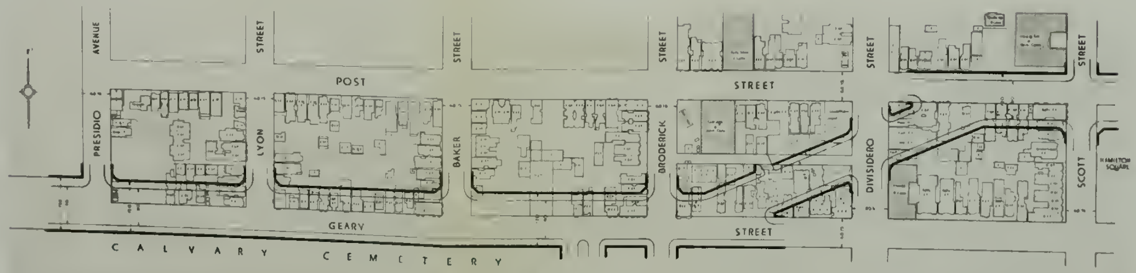
This first unit should receive the support of the entire city, as every district is benefitted. Upon the completion of more detailed plans, they should be exhibited and explained before civic bodies and improvement clubs, in order to definitely obtain the support of these organizations.

PLATE 18A

Connection of BRYANT STREET *to* HARRISON *and to* 11TH — VAN NESS

SAN FRANCISCO TRAFFIC SURVEY COMMITTEE
BARTHOLOMEW & ASSOCIATES — CONSULTANTS





SAN FRANCISCO TRAFFIC SURVEY COMMITTEE
BARTHOLOMEW & ASSOCIATES — CONSULTANTS

GEARY—POST CUT-OFF
AT DIVISIDERO STREET

Plate Eighteen-A

DETAILS OF PROPOSED IMPROVEMENTS

CONNECTION OF BRYANT TO HARRISON AND TO 11th - VAN NESS

GEARY - POST CONNECTION

The major street plan is a composite arrangement of traffic routes, whose locations are often general. There has been no attempt to fix hard and fast the details of these routes, such as dimensions of openings, descriptions of properties needed for widenings, profiles and the like. The plan will have to be carried out piece by piece, the improvements being programed over a period of years. Detailed intersection plans for traffic control must then be prepared for any intricate traffic intersections which may be created. Typical illustrations of detailed improvement plans are shown in this plate and plate Eighteen-B.

CONNECTION OF BRYANT TO HARRISON AND TO 11th - VAN NESS

The major street plan contemplates a tunnel from the southern end of Bryant Street to the Bayshore Highway. The traffic diverted by this tunnel from the Bayshore will be directed by the improvement shown here, either to Harrison, the southern distributor for the business district, to 11th - Van Ness, the western by-pass, or to Larkin, the western distributor. The Van Ness by-pass route will keep through traffic away from the business district. The distributor streets will inject traffic into the business district. Outgoing vehicles

will be collected by the distributors which will in turn feed the Bayshore-bound vehicles into Bryant Street.

Bryant is extended into Harrison by a viaduct and an opening. A leg of the viaduct comes into Eleventh. The legs on Eleventh and Bryant are slotted to allow street cars to go under. Eleventh is widened on the south side to Folsom, whence an opening and widening of Lafayette Street leads across Mission to Van Ness just north of Twelfth. Traffic confusion at the intersection of Eleventh, Market and Van Ness is remedied by rerouting the car line on Eleventh to the new route and by preventing left-hand turns from Eleventh into Market and from Van Ness into Market.

GEARY - POST CONNECTION

Geary Street is 125 feet wide west of Presidio Avenue and only 68.75 feet wide from Presidio to its easterly terminus at Market. The traffic flow diagram shows that this narrowing down in width results in splitting up the east-bound traffic and forcing it to find several routes into the business district. The major street plan provides for the widening of Geary from Presidio to Broderick, thence a connection to Post and the widening of Post Street easterly to Larkin. The widening of Geary and its connection to Post are shown in detail here. Post Street was chosen because it has no car line, and the connection to Geary should have been made near Presidio, were not the topography prohibitive.

Geary-Post will be the main traffic route from the business district westward to the Richmond District and the beach, serving a populous territory throughout its extent.

PLATE 18$^{\underline{B}}$

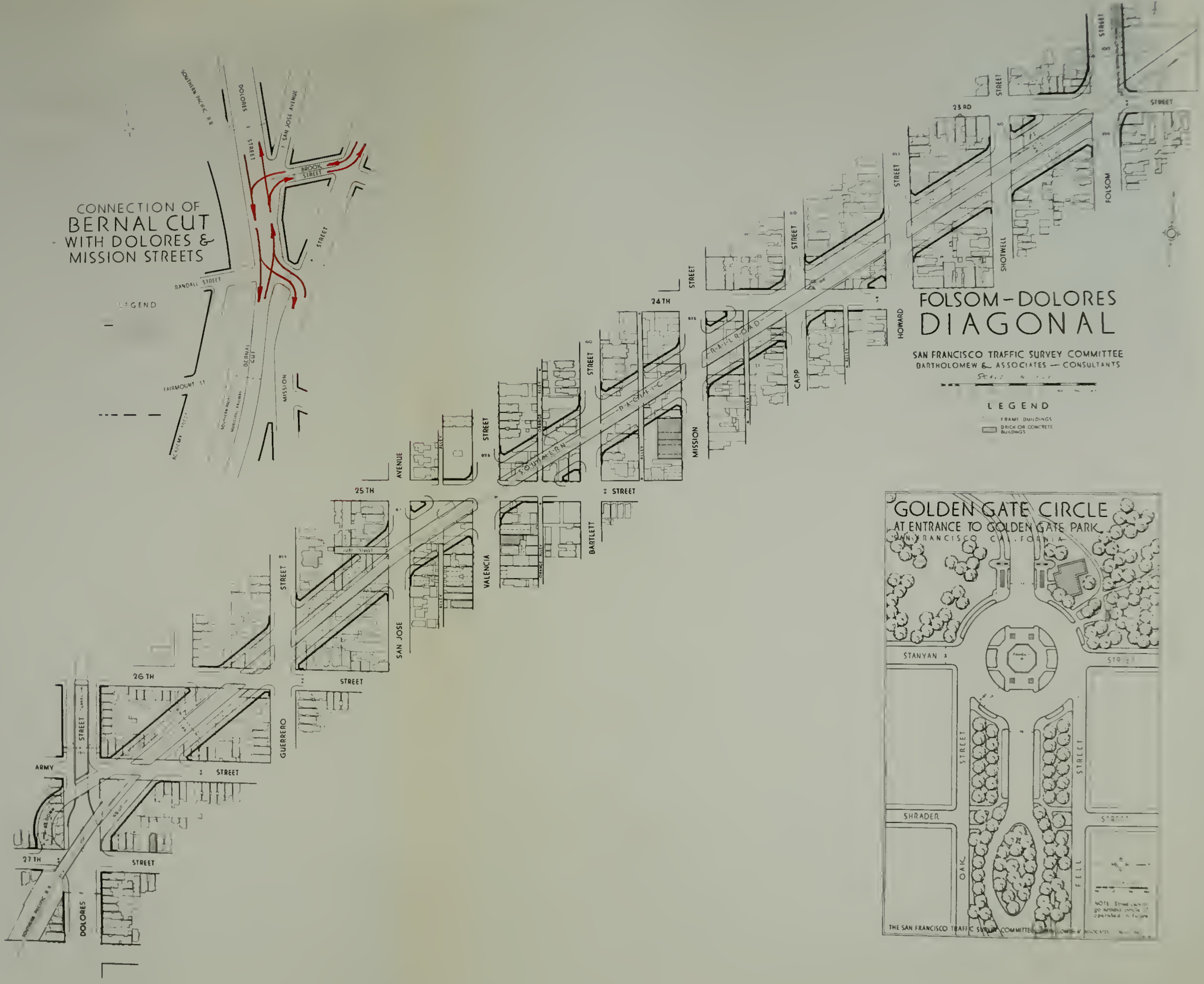
CONNECTION OF
BERNAL CUT
WITH DOLORES &
MISSION STREETS
LEGEND
SOUTHERN PACIFIC R.R.
DOLORES STREET
SAN JOSE AVENUE
BROOK STREET
STREET
RANDALL STREET
BERNAL CUT
FAIRMOUNT ST.
MISSION
ACADEMY STREET
FOLSOM-DOLORES
DIAGONAL
SAN FRANCISCO TRAFFIC SURVEY COMMITTEE
BARTHOLOMEW & ASSOCIATES — CONSULTANTS
LEGEND
FRAME BUILDINGS
BRICK OR CONCRETE BUILDINGS
FOLSOM
SHOTWELL
HOWARD
23 RD
STREET
CAPP
MISSION
24 TH
BARTLETT
SOUTHERN PACIFIC RAILROAD
VALENCIA
STREET
AVENUE
SAN JOSE
25 TH
GUERRERO
STREET
26 TH
STREET
ARMY
27 TH
STREET
DOLORES
SOUTHERN PACIFIC R.R.
GOLDEN GATE CIRCLE
AT ENTRANCE TO GOLDEN GATE PARK
SAN FRANCISCO CALIFORNIA
STANYAN STREET
SHRADER STREET
OAK STREET
FELL STREET
STREET
THE SAN FRANCISCO TRAFFIC SURVEY COMMITTEE

Plate Eighteen-B

DETAILS OF PROPOSED IMPROVEMENTS

Plate Eighteen-A showed detailed plans for two improvements. Three additional plans are shown here, two of them being intersection studies designed to straighten out the traffic confusion at the junction of main streams of travel.

FOLSOM - DOLORES DIAGONAL

North-bound traffic via the Bernal Cut and via Mission Street is offered an excellent route, Dolores Street, leading it to this diagonal. The main volume of traffic will flow on the diagonal to Folsom, thence to the south side of the business district. Folsom will be widened in order to give it additional capacity. The diagonal, however, will also distribute traffic into Valencia, Mission and Howard.

A roadway is shown on either side of the Southern Pacific right-of-way. Although there is but a single track now, ample width is reserved in the center for future double tracked rapid transit in an open cut. Each of the two roadways will have a capacity of four lines in one direction.

CONNECTION OF BERNAL CUT WITH DOLORES AND MISSION STREETS

Unless some such plan as this is adopted for connections between the Bernal Cut and Dolores and Mission Streets, there will be conflict between traffic streams flowing between the various routes.

Brook Street is used here for interchange between the Bernal Cut and Mission. Randall Street is used for interchange between Dolores and Mission. By a separation of movements the traffic streams can be readily controlled and confusion avoided.

GOLDEN GATE CIRCLE

The present Panhandle entrance to the Park at Stanyan is conducive to traffic confusion, as the space is wide, and there is no definition of lanes for traffic. The use of Oak and Fell as one-way streets and an increase of travel on them will add to the intersection problem. A traffic circle can be constructed here without taking any private property. This will entirely eliminate traffic confusion.

A circle at the entrance to the park, with proper landscape treatment will have an esthetic appeal of great value to the community.

PLATE 19

SAN FRANCISCO CALIFORNIA

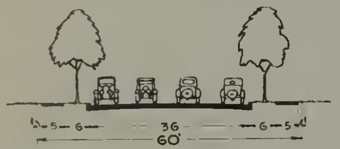
CROSS SECTIONS OF MAJOR & MINOR STREETS

SAN FRANCISCO TRAFFIC SURVEY COMMITTEE
HARLAND BARTHOLOMEW & ASSOCIATES · CONSULTANTS

MAJOR STREETS

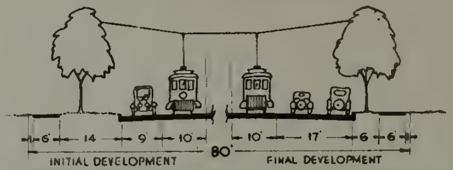
THE CAPACITIES OF TRAFFIC ARTERIES SHOULD BE MEASURED IN LINES OF VEHICLES. ROADWAY WIDTHS (BETWEEN CURBS) ARE DESIGNED TO CARRY A DEFINITE NUMBER OF LINES OF VEHICLES. STREET WIDTHS ARE DESIGNED TO ACCOMODATE PEDESTRIAN WAYS (SIDEWALKS) IN ADDITION TO ROADWAYS. THE FOLLOWING DESIGNS FOR MAJOR STREETS ARE RECOMMENDED AS SUITABLE FOR SAN FRANCISCO.

FOUR LINE THOROFARE



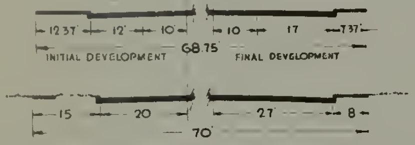
A 60 FOOT STREET WITHOUT CAR LINES IS THE NARROWEST MAJOR STREET IN THE PLAN. THE CAPACITY IS 4 LINES OR ONE MOVING LINE IN EACH DIRECTION.

SIX LINE THOROFARE

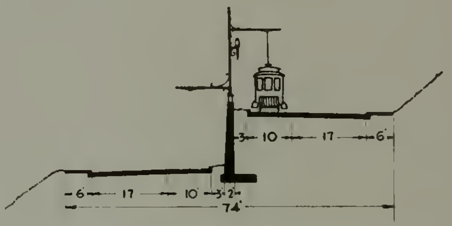


A WIDTH OF 80 FEET IS THE DESIRABLE MINIMUM FOR A 6 LINE MAJOR STREET WHETHER IT CARRIES STREET CARS OR NOT. THE ROADWAY NEED NOT ORIGINALLY BE CONSTRUCTED TO ITS ULTIMATE WIDTH UNTIL TRAFFIC WARRANTS.

SIX LINE THOROFARES

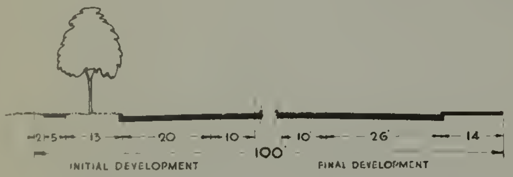


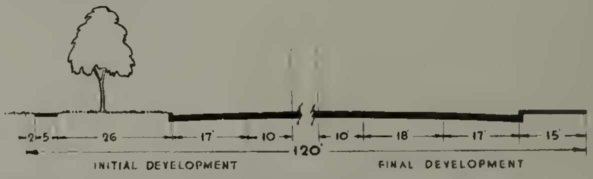
A TIGHTLY DEVELOPED BUSINESS DISTRICT OR A RESTRICTED RESIDENCE DISTRICT MAY NECESSITATE A WIDTH LESS THAN 80 FEET FOR A 6 LINE MAJOR STREET. EXISTING ROADWAYS MAV SUFFICE FOR A TIME IN RESIDENCE DISTRICTS FRONT YARDS WILL GIVE OPEN SPACE TO COUNTERACT THE NARROW STREET WIDTH.



STEEP HILLSIDES MAY SUGGEST TWO-LEVEL ROADWAYS FOR A SIX LINE MAJOR STREET, IN WHICH CASE THE WIDTH MAY BE LESS THAN 80 FEET. A STAIRWAY FOR STREET CAR PASSENGERS MAY BE INCLUDED IN THE RETAINING WALL SECTION.

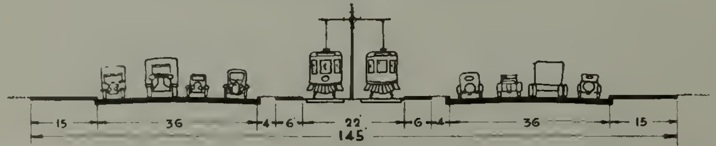
EIGHT LINE THOROFARES





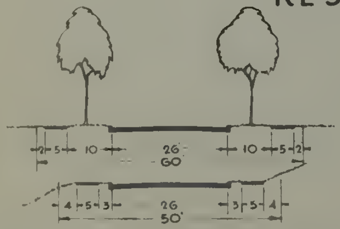
MAIN ARTERIAL THOROFARES WITH CAR LINES SHOULD HAVE A WIDTH OF 100 FEET. A STREET 120 FEET WIDE WILL ACCOMMODATE DIAGONAL PARKING AS AN 8 LINE STREET OR FORM A TEN LINE STREET WITH PARALLEL PARKING.

TEN LINE THOROFARE

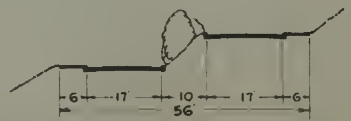


8 OR 10 LINE THOROFARES CAN BE CONSTRUCTED WITH A MIDDLE CAR LINE STRIP. THIS RIGHT-OF-WAY MUST INCLUDE LOADING PLATFORMS AND MAY BE DESIGNED FOR FUTURE RAPID TRANSIT IN AN OPEN CUT.

RESIDENTIAL STREETS



A DESIRABLE WIDTH ON RESIDENTIAL STREETS IS 60 FEET. EXTREME WIDTH IS NOT NECESSARY EXCEPT FOR EFFECT.



RESIDENTIAL STREETS ON STEEP HILLSIDES MAY HAVE TWO-LEVEL ROADWAYS WITH A NARROW PARK STRIP IN BETWEEN.

Plate Nineteen

CROSS SECTIONS OF MAJOR AND MINOR STREETS

Major streets conforming to the plan both as to location and traffic capacity can be largely acquired in two ways. Condemnation or negotiation methods must be utilized in developed portions of the city. In unsubdivided territory, however, the acquisition can be the result of dedication.

Major streets obtained by dedication should conform to the following table of width standards which are determined by the designated traffic capacity of the streets in lines of vehicles.

CAPACITY*	STREET WIDTH	ROADWAY WIDTH
4 lines (minimum for major street)	60	36
6 lines	80	54
8 lines	100 - 110	72
10 lines	120 or over	90

*To determine roadway width an 8 foot width is used for a parked line of vehicles, a 9 foot width for a moving line of vehicles and a 10 foot width for a line of street cars.

These street widths give ample sidewalk space under ordinary circumstances and should not be exceeded, unless it is desired to have greater space for walks or grass plots to be laid out for major streets thru residential areas. It is recognized that the above width standards may have to be reduced for dedicated streets in very rugged territory. To

do this without altering the specified roadway width, it will be necessary to reduce the standard space allotted to sidewalks or grass plots. Provision should always be made for obtaining the ultimate desirable roadway widths, even though existing traffic flow requires no such width.

Subdividers can usually save in minor streets widths more than the excess width required for major streets. As shown in Plate Ten widths of many minor streets in San Francisco are excessive. Sixty feet is the ideal width as it allows ample space for grass plots between the curbs and property lines. In few cases should it be necessary to accept dedicated streets of less than fifty feet in width.

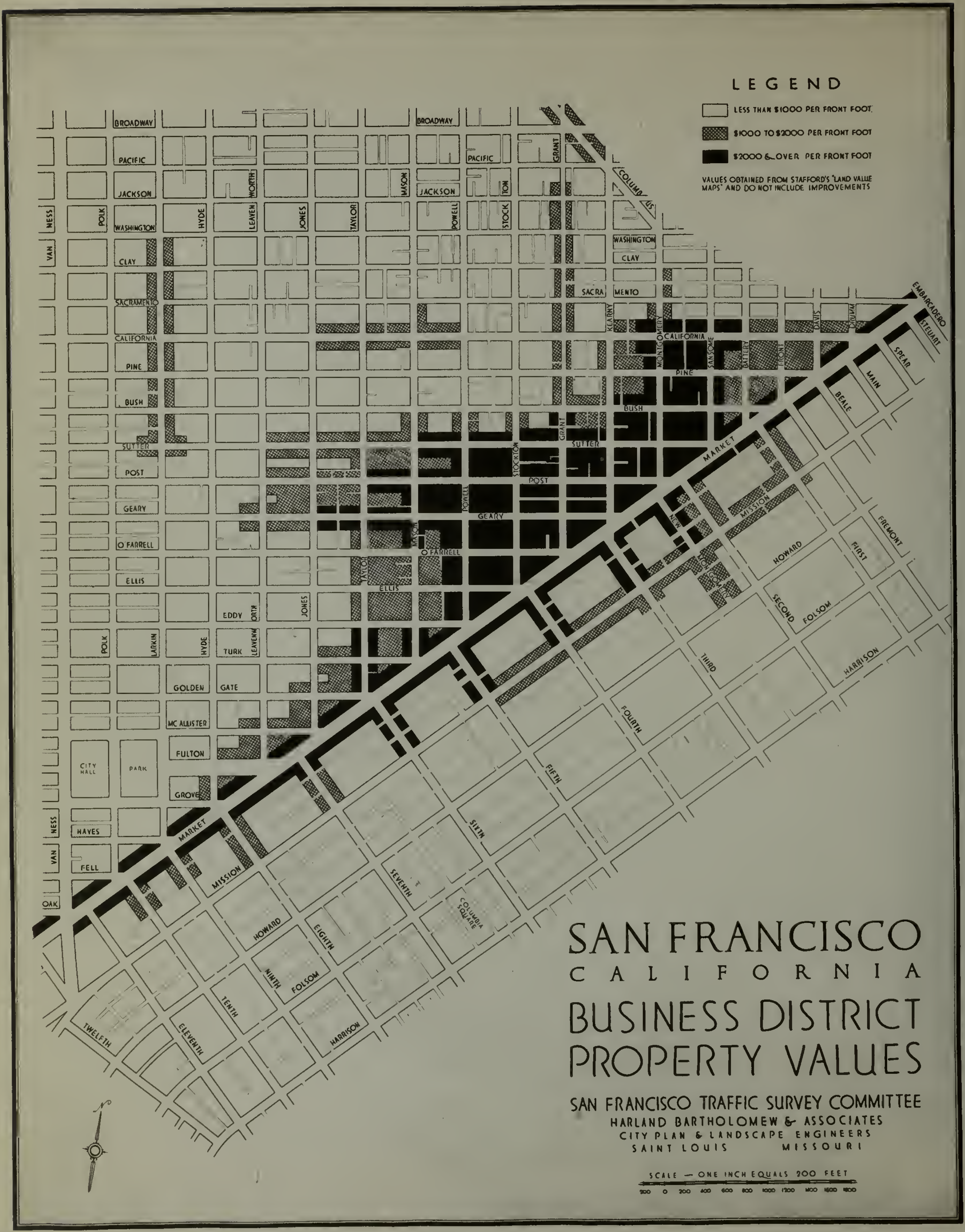
Major streets widened or opened in developed territory should also conform to the widths given in the table of standards. However, there is more likelihood here of economy dictating a reduction of total street width. Many existing roadways can be widened to their designated capacities by reducing sidewalks. This is an excellent scheme providing the demands of pedestrian traffic movement are not refused thereby. Even though a light pedestrian volume is experienced now, it may be felt that an ultimately large number of people must be provided for. It is advisable then to anticipate the future taking of property needed to construct walks of adequate width, by establishing building set-back lines.

PART SIX

BUSINESS DISTRICT DEVELOPMENT

In and around the business district of San Francisco are found the most aggravating causes of congestion, grades, inadequate street widths, intensive street car operation, pedestrian concentration and the like. The district has developed in its present form because of some of these conditions and in spite of others. But it is very responsive to changes in circulation and shifts of traffic movement. The preservation of investments and values in this district depends upon the maintenance of open traffic channels, the development of new approaches to meet the increasing use of automobiles and the development of plans for more efficient use of both street space and private property.

PLATE 20



LEGEND

☐ LESS THAN $1000 PER FRONT FOOT

▨ $1000 TO $2000 PER FRONT FOOT

■ $2000 & OVER PER FRONT FOOT

VALUES OBTAINED FROM STAFFORD'S "LAND VALUE MAPS" AND DO NOT INCLUDE IMPROVEMENTS

SAN FRANCISCO
CALIFORNIA
BUSINESS DISTRICT PROPERTY VALUES

SAN FRANCISCO TRAFFIC SURVEY COMMITTEE
HARLAND BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
SAINT LOUIS MISSOURI

SCALE — ONE INCH EQUALS 200 FEET
200 0 200 400 600 800 1000 1200 1400 1600 1800

Plate Twenty.

BUSINESS DISTRICT PROPERTY VALUES

One of the principal benefits of city planning is the preservation and enhancement of property values. Many American cities have experienced shifts of business districts, leaving in their wake a trail of blighted property. Some cities are spending millions of dollars in an attempt to bring new life and activity into these blighted areas. Proper planning would undoubtedly have prevented some of these shifts, and delayed others.

The history of the San Francisco business district reveals a steady advance toward the southwest. The first stores of the early city were to be found near the waterfront which rimmed a sheltered harbor. Business activity was centered around Front and Sacramento Streets. Residential expansion took place to the south and west. Business expanded to the west as far as topography permitted, and to the south-west against the pull of traffic to and from the East Bay. The geographical center of the present business district is close to Third and Market, over a half mile away from the former center. This growth to the south-west represents a normal expansion of the business district but it is beginning to take on the proportions of a shift. The site occupied by the original stores has very little value now, and certainly is not included in the present business district.

Intensive land values of two thousand dollars or more per front foot are shown on the map in solid black. Values from

one thousand to two thousand dollars per foot are shown by hatching. The pattern thus formed represents roughly the size and shape of the high class retail and financial district. The data was obtained from the "land value maps" of James G. Stafford, published in 1927. It is probable that the down town values shown on these maps represent about eighty percent of actual market values of real estate.

Values are shown spreading away from the financial district. The severe grades on California and Pine have prevented the advance of business to the westward here, just as grades on the east-west streets of the original district prohibited such westward growth. The high values have sought easy gradients and have consequently followed Sutter, Post and Geary as the routes of least resistance in their westward march toward high purchasing power.

Transit on Market Street has exerted such a powerful influence on the growth of the central area that values above two thousand dollars a foot exist on this street as far as Van Ness Avenue. Market Street enjoys the highest value of land in San Francisco, the maximum being at Fifth. Both sides of the street from New Montgomery to Seventh (a distance of almost a mile) have unit foot values of over five thousand dollars. In direct contrast with these high values are those on the south side of Market. While the map shows black frontages between Market and Mission on New Montgomery, Third, Fourth, Fifth and Sixth, and there is some shaded area along Mission Street between First and Fifth, there is no front foot

value higher than four hundred dollars on Howard. This is indicative of the average land value to be found between Howard & Mission.

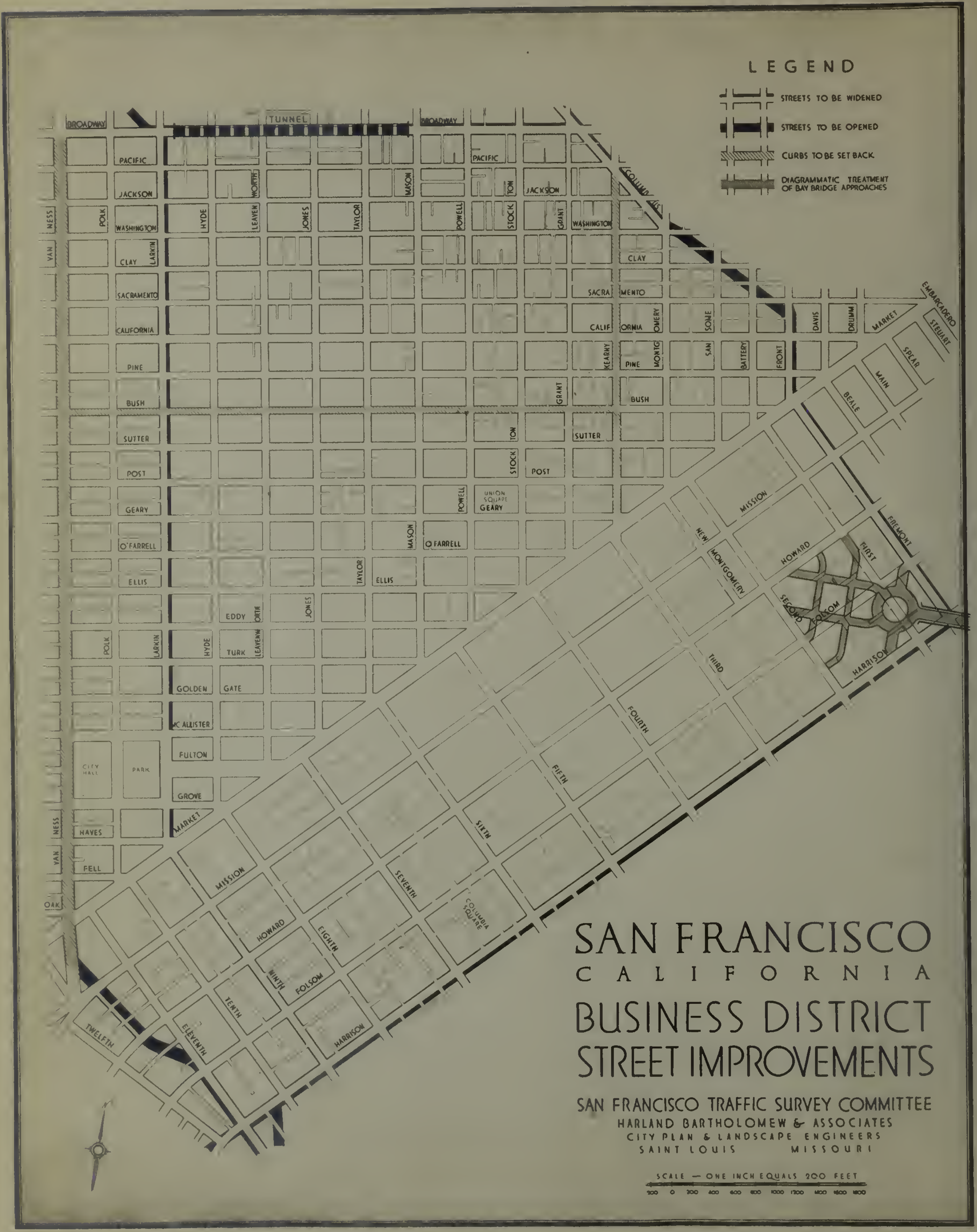
It is apparent that there are two questions which sooner or later should be answered:

1. How long can the present values to preserved?
2. How can normal expansion be assured?

The Major Street Plan proposes routes to lead traffic into the lower or southern section of the business district from other parts of town, as a means of keeping business here and preserving values. Values in other sections of the district will be maintained only so long as traffic circulation in each part is facilitated. Arteries are also proposed which lead into the district south of Market Street for the purpose of creating room for business expansion in this area. Re-arrangement of large blocks is suggested in Plate Twenty-two as a means of opening up property on new streets which will be attractive to business.

Measures such as these are practical means of preserving values in San Francisco's business district, and checking the present tendency of developing into a shoestring.

PLATE 21



SAN FRANCISCO
CALIFORNIA
BUSINESS DISTRICT STREET IMPROVEMENTS

SAN FRANCISCO TRAFFIC SURVEY COMMITTEE
HARLAND BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
SAINT LOUIS MISSOURI

Plate Twenty-one

STREET IMPROVEMENTS AFFECTING BUSINESS DISTRICT DEVELOPMENT

Congestion in downtown San Francisco as in other large cities is an increasing problem. Traffic delays are becoming more onerous to the travelling public as no certain headway is made in removing the causes of such delays.

A study of the physical characteristics of the downtown street system supplemented by Dr. McClintock's findings regarding traffic flow indicate that the causes of congestion are the following:

1. Improper traffic control.
2. Narrow streets north of Market Street.
3. Large pedestrian volume.
4. The angle at which the streets meet Market Street on the north and lack of crossings.
5. Lack of distributor and by-pass streets close to the central area.
6. Extensive use of streets by street cars.

The McClintock recommendations are being adopted by the city and put into effect. Results prove that they have greatly assisted in the relief of congestion. Additional studies are now being made under the direction of the Traffic Law Enforcement Board. This gives assurance that any remaining defect in the system of traffic control will be corrected.

Street widths north of Market are in most cases 68.75 feet, with roadway widths varying from 35 to 44 feet. Since

most streets have car lines and parked vehicles at both sides, there is not room for one single free moving line of vehicles. Pedestrians are in need of every foot of sidewalk space on these streets - so it is not often possible to increase roadways by setting back the curbs.

The great number of pedestrians in the downtown section, particularly on Market Street, add greatly to traffic delays. Many corners must be controlled by traffic signals to safeguard pedestrian movements. This is a cause of congestion for which there is no apparent complete remedy.

The street pattern north of Market Street has little relation to that on the south. Both patterns are rectangular, but the blocks in the southern part are about four times the size of those on the north of Market. The northern street pattern, moreover, does not run parallel to Market. On the other hand, it is so arranged that every east-west street meets Market at its intersection with a north-south street. The control of pedestrians, vehicles and street cars is extremely complicated at such intersections, and particularly at those corners which are so located as to meet streets on the south side of Market. On the other hand, there is little traffic on northern streets which do not cross to the south. This uneven flow is seen on the traffic flow diagram, Plate Eleven. Certain streets, therefore, are not functioning in their utmost capacity as vehicle carriers.

Back of the business district on the north are steep

hills which have prevented the construction of any traffic street parallel to Market to act as a by-pass route or to distribute the business district traffic going and coming. Much delivery traffic and other crosstown traffic is forced to proceed through the congested area to travel from origin to destination. Traffic through the Stockton Street tunnel must cross the area of greatest congestion. Vehicles bound crosstown should be routed around the district and not allowed to add to the congestion in the center. Van Ness Avenue is a splendid example of a by-pass street. It also acts as a distributor - but is too far removed from the congested business area to perform an effective distributing function.

Market Street should be a splendid central vehicular traffic street. The vehicular capacity of this street, however, has been so limited by street car operation as to be of little value in the circulation scheme. The four tracks in the center of the roadway leave room for only one moving line of vehicles in each direction. Both north and south of Market there is duplication of street car service. This renders many streets of little use as carriers of vehicles. Just because a line was franchised twenty years ago, there is no good reason why its operation should be continued if it is no longer essential.

Methods of relieving congestion must begin outside the heart of the central area. Street openings or widenings here

are not economically feasible, and it is doubtful if such projects would do more than to pour traffic into the center, and thus add to the present difficulties. A huge traffic street cut diagonally through the small blocks north of Market Street would seriously interrupt the flow of vehicles upon cross streets in both directions.

It is possible to increase vehicular flow by narrowing sidewalks, although pedestrian traffic is too heavy to permit of this in most places. The traffic demands of a few streets warrant the following recommendations:

1. Kearny is 75 feet wide with a 47 foot roadway. Roadway should be increased to 54 feet from Market to Columbus, leaving 10.5 foot walks.

2. Columbus is 80 feet wide with a 50 foot roadway. Roadway should be increased to 54 feet from Kearny to Broadway. The Kearny-Columbus route will more than double the traffic capacity of Kearny and relieve Stockton Street.

3. Bush is 68.75 feet wide with a 38.75 foot roadway. Roadway should be made 54 feet from Kearny to Van Ness. This would feed traffic into the lower, less congested section of the business district by a route free of car lines.

4. Van Ness Avenue is 125 feet wide with an 81 foot roadway. Roadway should be increased to 90 feet. This would add two lines to the capacity of the street.

Traffic capacities of certain streets may be increased by the prohibition of parking. Actual recommendations should, however, be made after a more intensive study of traffic movement over a period of several months.

No definite recommendations can be made regarding changes in the street car systems. It is obvious that dupli-

cation of service exists, and that some streets, both north and south of Market, should be freed of car lines. Market Street will never be able to accommodate much vehicular traffic with its four tracks. Future congestion may make it necessary to separate the streams of vehicles and street cars by placing the tracks in a subway.

San Francisco needs a loop of wide streets around the business district. Topography and the street arrangement north of Market suggest the use of the following streets for the loop:

> On the west - Van Ness Avenue and Eleventh Street, supplemented by Larkin and Ninth Street. Larkin should be widened to eight lines between Market and Broadway.
>
> On the north - Broadway, Columbus, Columbus extended to Front, Front, Fremont. Broadway should be tunneled through from Larkin to Mason and the roadway widened to 54 feet from Van Ness to Columbus. Eventually the capacity of Broadway between Van Ness and Columbus should be increased to eight lines. Columbus and its extension, and also Front and Fremont should be constructed to a capacity of eight lines. This extra width is necessary to carry traffic from the approach of the future bay bridge.
>
> On the south - Harrison. Harrison should be widened to ten lanes from Front to Eleventh.

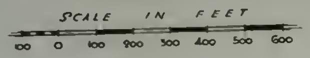
This loop will act as a by-pass on the west and north and as a distributor on the south. It is the function of the street plan to carry traffic to the sides and ends of the central area - not to the middle - and let it diffuse into the district from the loop streets. The scheme here proposed, operating in conjunction with the proposed radial routes leading to the business district will allow traffic from all

parts of town to flow into the street system south of Market. The diagonal to the Marina can carry traffic to Broadway, thence to Harrison via Columbus, Front and Fremont. Traffic from Oak and Fell can turn into Van Ness, Eleventh, thence into one of the streets between Harrison and Market. Travel from the southern arteries can turn into Harrison.

The area south of Market with its low values will soon be put to a greater use. Storage garages should be constructed in the central portions of the large blocks. Shoppers and office workers can park their cars and walk across Market to their destination. This habit will decrease traffic congestion on the north side.

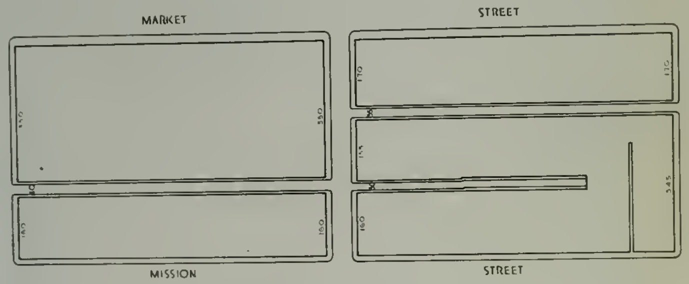
PLATE 22

THE SAN FRANCISCO
TRAFFIC SURVEY
COMMITTEE

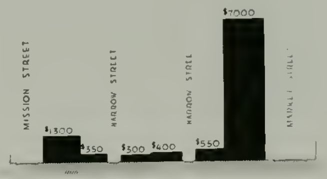


SAN FRANCISCO CALIFORNIA
PROPERTY DEVELOPMENT SOUTH OF MARKET STREET
SHOWING SUGGESTED METHODS OF MAKING THE INTERIORS OF LARGE BLOCKS MORE USABLE

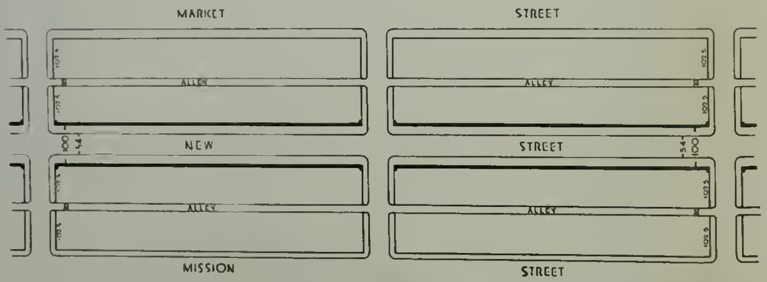
HARLAND BARTHOLOMEW
& ASSOCIATES
CITY PLAN ENGINEERS
SAINT LOUIS



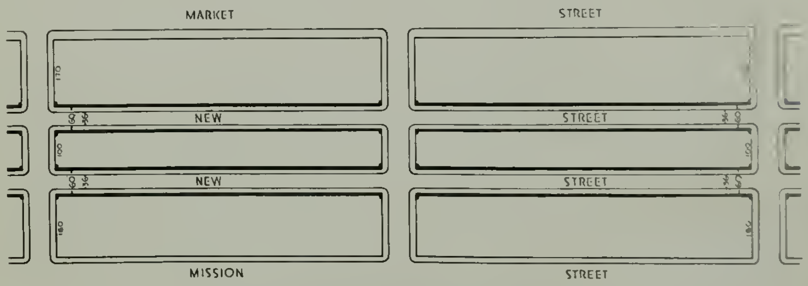
A TYPICAL EXISTING CONDITION SHOWING LARGE BLOCKS CUT BY VERY NARROW & DISCONTINUOUS STREETS



B DIAGRAM OF FRONT FOOT VALUES ALONG A SECTION THROUGH TYPICAL BLOCK — NOTE GREAT DIFFERENCE BETWEEN MARKET STREET FRONTAGE AND A HALF BLOCK BACK



C SUGGESTED NEW WIDE STREET REPLACING PRESENT NARROW STREETS TO CREATE VALUABLE FRONTAGE AND ALSO RELIEVE CONGESTION ON BOTH MARKET & MISSION STREETS



D ALTERNATE SUGGESTION SHOWING PRESENT NARROW STREETS WIDENED · EXTENDED & CONNECTED TO PROVIDE CIRCULATION AND INCREASED USABILITY

Plate Twenty-two

PROPERTY DEVELOPMENT SOUTH OF MARKET

The development of the district immediately south of Market Street, from the time when it was first laid out in the early '50's, has been of great interest to those who appreciate the importance of balanced city growth. Property values and types of property uses here have been different at all times from those in areas north of Market Street, notwithstanding the fact that land was more level, streets to the water front were wider and parallel to Market and blocks were of regular shape. Today, with heavy volumes of street car and vehicular traffic flowing on Mission, Howard, Third, Fifth and other streets, property conditions indicate that the section suffers from certain handicaps.

The chief causes of the low value and utility of property here are (1) the difficulty of crossing Market Street, (2) the inadequacy of traffic arteries leading directly into the district, (3) the sizes of blocks, and (4) the improper ratios of highway space to private property. The Market Street crossings can be somewhat improved by better traffic control. The approaches will be much more advantageous when certain projects of the Major Street Plan are carried out, notably the extension of Duboce Avenue to Thirteenth Street, the extension of Harrison to Folsom, the construction of the tunnel joining Sixteenth Street with the Sunset District and the opening of Bryant Street and Bayshore Highway to the peninsula

communities, putting this south of Market district in direct communication with territory increasing in population and purchasing power.

The sizes of blocks and proportionate street area are the two factors, however, which tend to hold this district back in spite of all other influences. The blocks are quite generally 550 feet by 825 feet, the streets bounding them being 82.5 feet wide. Through each block lengthwise runs one or two narrow streets generally either 35 or 45 feet wide. On the north side of Market Street where the higher property values and intensive property uses are found, the blocks are about one-fourth as large and are bounded by streets generally 66, 68 or 74 feet wide. The table below shows comparative street conditions in similar areas north and south of Market Street:

	North of Market St.	South of Market St.
Percent of area in streets	33.4	31.2
Percent in wide streets	31.9	21.8
Percentage of total street area in wide streets	95	70

When properly interpreted these figures show that the district south of Market is deficient in total street space for intensive business use, is afflicted with many acres of narrow streets which scarcely help circulation and contribute little to the value of property frontage thereon. In a

word, here are huge blocks with certain potential values around the perimeter but with decadent property at the center.

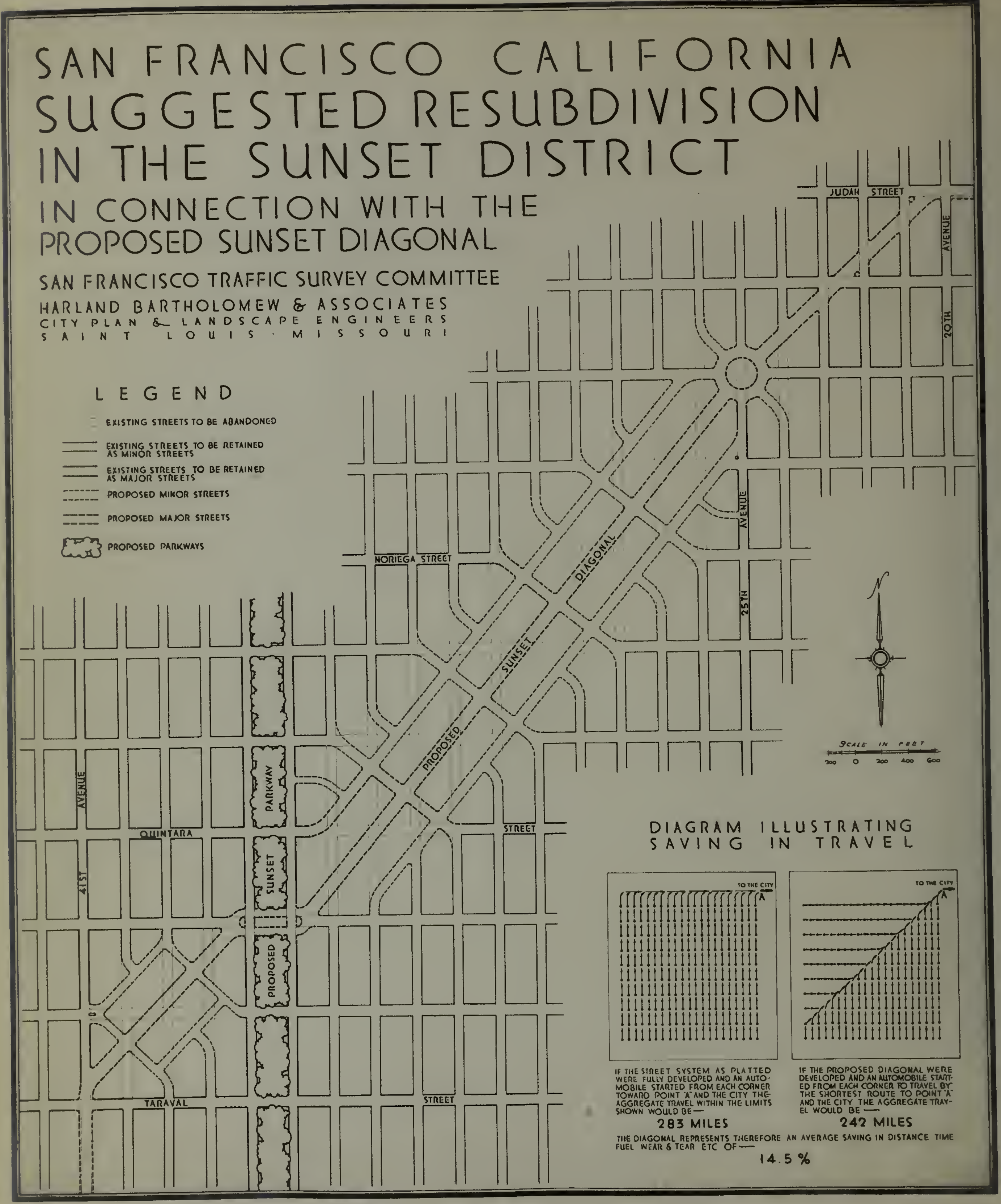
The Major Street Plan will bring increasing traffic into this section. It is important that business activities be developed here which will make a crossing of Market less and less necessary. The reorganization of street space in the district south of Market is a work of reclamation, deserving serious consideration in connection with studies of major traffic arteries. The plate opposite suggests various devices by which the large blocks may be given greater values and circulation through this section materially improved. The sketches merely show that traffic access to the block centers should be provided, creating frontage on whatever new streets are built. A detailed study of the economics must be entered into before final recommendations can be given.

PART SEVEN

PLANNING FOR NEW GROWTH

In preceding sections the emphasis has largely been upon the need of corrective street improvements. The major street plan is primarily a measure to overcome faults in streets already in existence. Of equal or greater importance is the prevention of further mistakes wherever new streets are to be laid out. The unplatted territory of the present city is limited, so opportunities for demonstrating the value of careful initial planning are few. But the peninsula is virgin territory and new urban growth should be under strict control clear to Palo Alto.

PLATE 23



SAN FRANCISCO CALIFORNIA
SUGGESTED RESUBDIVISION IN THE SUNSET DISTRICT
IN CONNECTION WITH THE PROPOSED SUNSET DIAGONAL

SAN FRANCISCO TRAFFIC SURVEY COMMITTEE

HARLAND BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
SAINT LOUIS · MISSOURI

DIAGRAM ILLUSTRATING SAVING IN TRAVEL

IF THE STREET SYSTEM AS PLATTED WERE FULLY DEVELOPED AND AN AUTOMOBILE STARTED FROM EACH CORNER TOWARD POINT "A" AND THE CITY THE AGGREGATE TRAVEL WITHIN THE LIMITS SHOWN WOULD BE—

283 MILES

IF THE PROPOSED DIAGONAL WERE DEVELOPED AND AN AUTOMOBILE STARTED FROM EACH CORNER TO TRAVEL BY THE SHORTEST ROUTE TO POINT "A" AND THE CITY THE AGGREGATE TRAVEL WOULD BE —

242 MILES

THE DIAGONAL REPRESENTS THEREFORE AN AVERAGE SAVING IN DISTANCE TIME FUEL WEAR & TEAR ETC OF—

14.5 %

Plate Twenty-three

REPLANNING PROBLEMS

The now famous 1867 survey of "outside lands", which imposed the rectangular pattern of streets upon many square miles of San Francisco territory, has been a great handicap to proper civic development. From time to time efforts have been made to escape the evil consequences of this survey by replatting streets in certain sections of the city so that they fit the terrain.

The City Engineer has been especially active in promoting this sort of work and his department is credited with several excellent accomplishments along this line. A rearrangement of property lying on the hills in the eastern section of the Sunset District is the latest of these efforts. Streets of easy gradient now take the place of those which were formerly too steep ever to be opened, salable lots exist where almost worthless hillsides stood.

There are many other districts in which similar replanning projects should be undertaken. The whole of Hunter's Point demands restudy. The limitations of this report have been such that a work of this magnitude could not be undertaken. A special appropriation should be made for a thorough investigation of all replanning opportunities in the city. There are ample evidences that the costs of such an endeavor will be recovered many times over in the

release of property now of low utility and of low value.

The entire Sunset District may be taken as a good example of a large area which would respond to more intelligent treatment of its street system. The present street pattern condemns a vast area to a most monotonous type of civic development, miles of straight streets, all alike. This arrangement does not suit traffic needs. The east-west streets end at hills on one side and at the ocean on the other; the north-south streets are blocked by Golden Gate Park and the Spring Valley Water Company lands and golf courses. Traffic is forced out of its way. If this street system is ever fully developed, every vehicle entering it will be required to travel an excess mileage amounting in the aggregate in each year to thousands of miles more than would be required if the street arrangement were designed to meet real traffic needs.

The district should have above all else at present a diagonal route approximately 1.7 miles long from a point near 41st and Taravel to 20th and Judah. Such a street can be opened now at relatively low cost. It should, under no circumstances, however, be merely a straight single diagonal. The land traversed by the diagonal for a distance of perhaps two blocks on either side should be replatted to provide relief streets for the diagonal, give the diagonal a fully usable frontage, eliminate dangerous and complicated intersections and push the triangles and odd shaped blocks away

from the new street into territory where frontage is less valuable.

The construction of a few new streets along the lines shown, even if no further efforts were made to revise the entire street plan would be beneficial alike to all the property owners of the Sunset district and to the city at large. In the first place, the area would have a clearly marked, adequate major traffic entry, opening it up to development. In the second place, the monotonous uniformity of the present street pattern would be relieved and there would be some stimulus at least to variation in type of development and consequent possibility of improved property values. In the third place, the district and the city would be forever saved the super tax of unnecessary travel. What this would amount to may be seen in the diagram on Plate Twenty-two.

The diagonal will save seven-tenths of a mile between 41st and Taraval and 20th and Judah and slightly lesser distances from every other point served by it. Multiply these savings by the number of motor cars likely to be operated, the tires used, fuel consumed, time of drivers and passengers wasted and other items over periods of one, five, fifteen, fifty years and it can be seen that this project is not an expense to the city but an investment and saving of considerable magnitude. The difficulties of carrying it out may seem insurmountable, but officials of San Francisco will be rendering their city a great service to undertake a work of such sound value.

PLATE 24

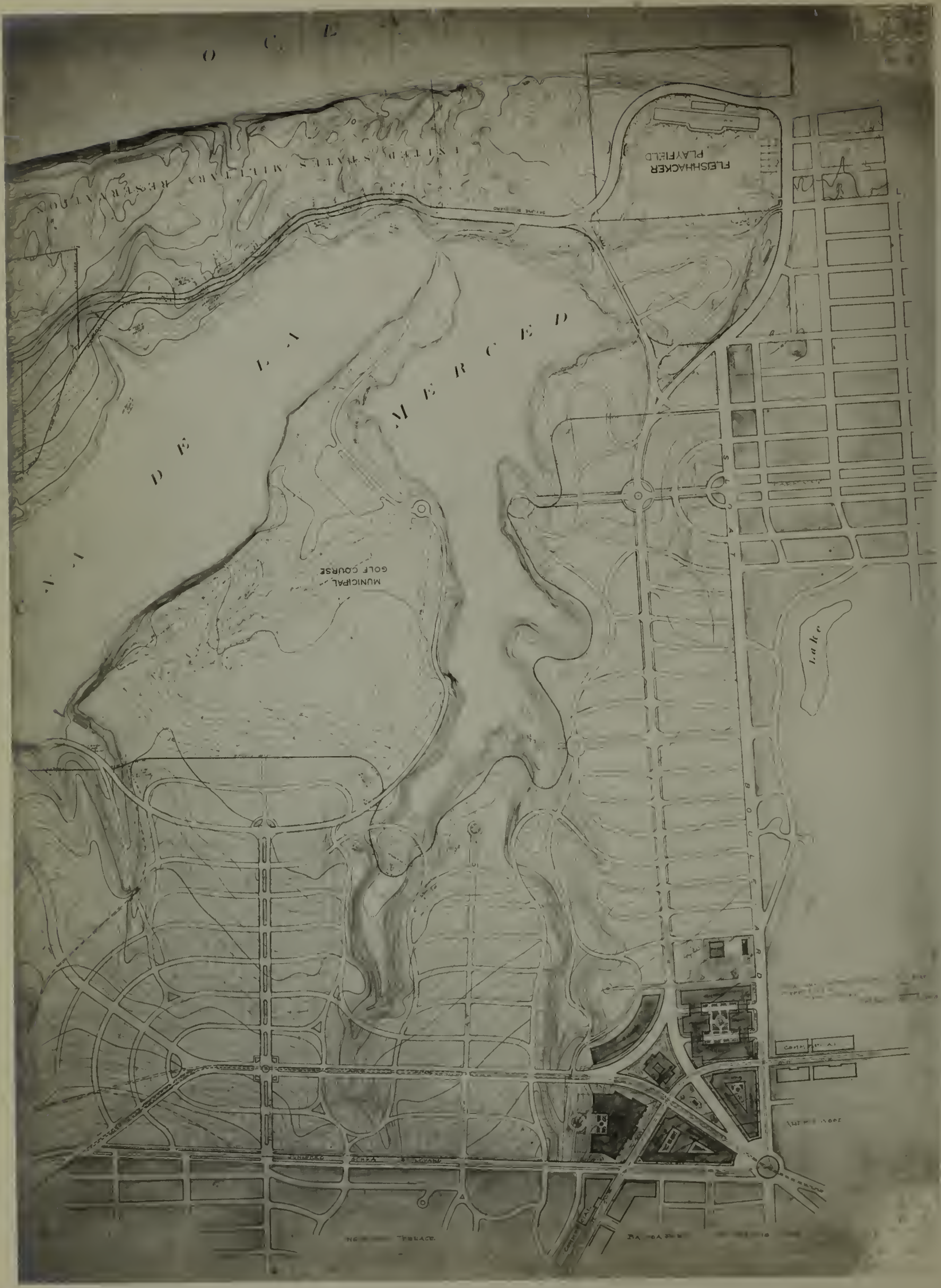

OCEA
UNITED STATES MILITARY RESERVATION
FLEISHHACKER PLAYFIELD
NA DE LA MERCED
MUNICIPAL GOLF COURSE
SLOAT BOULEVARD
Lake
COMMERCIAL
TERRACE

Plate Twenty-four

PLANNING NEW CITY AREAS

The chief emphasis of preceding studies has been placed upon the need of correcting mistakes in the street plan and adapting it to present and future traffic demands. Suck work is costly and often tedious. To avoid more of such replanning it would seem wholly appropriate to give some consideration to ways and means of building the city in the future so that these highway troubles will not occur. This is planning and its purpose is to shape outlying areas for the future.

There is very little of the present corporate area of San Francisco that is still open and subject to development according to well-considered comprehensive plans. The lands of the Spring Valley Water Company lying south of Sloat Boulevard constitute the largest and most important unplatted area. This company has appreciated the value of broad plans and at considerable expense has prepared studies showing what they consider appropriate forms of development for their lands. One of these plans is introduced here, not with the object of definitely recommending the arrangement of streets and blocks shown, but to point out the value of extensive street planning studies in new city territory.

It will be noted that this map shows several wide, direct streets that dominate the layout. These are the major

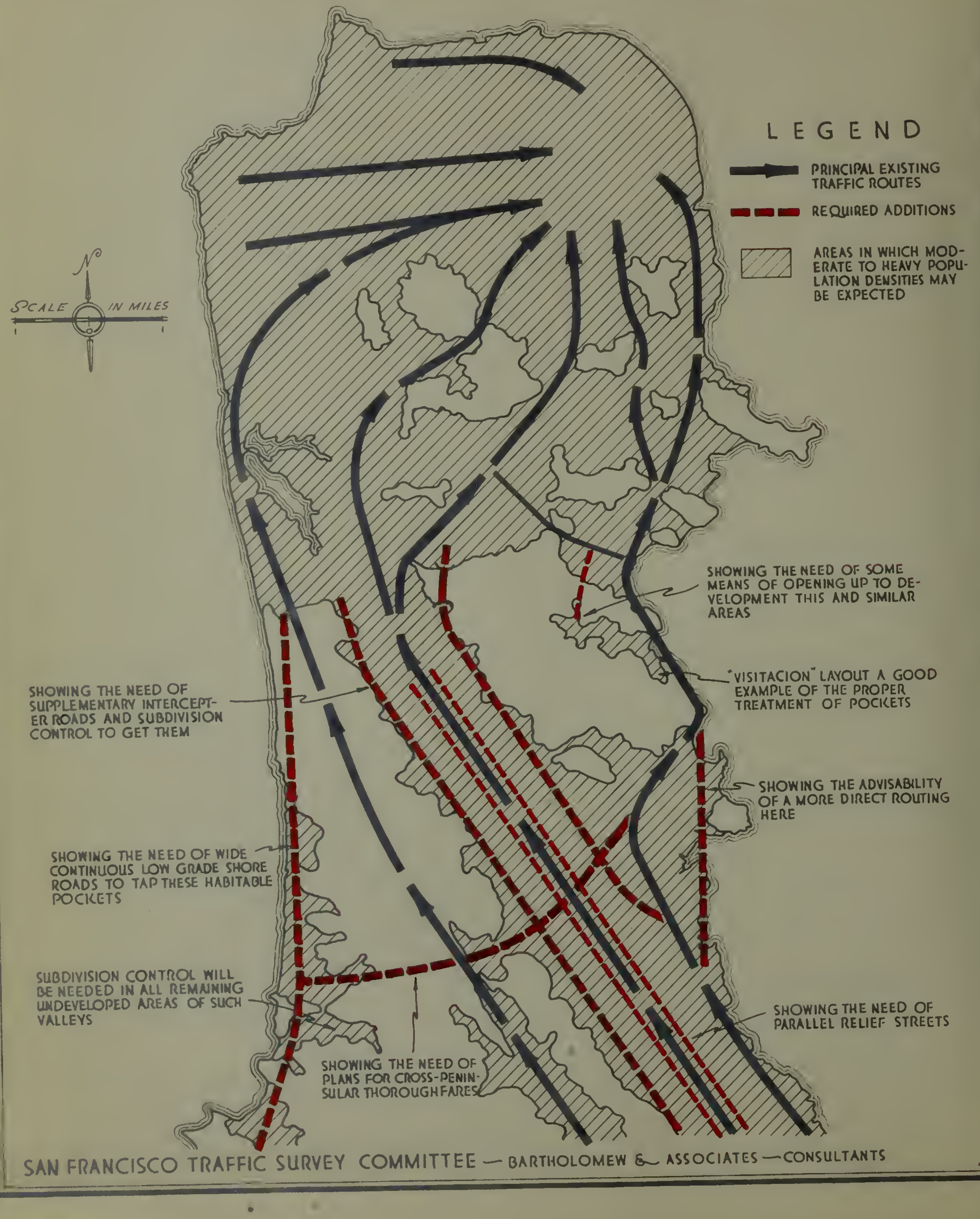
streets of this particular plan. They do not in every case follow the lines of the major streets proposed in this report, for at the time this plan was made there was no official major street plan to follow. So long as the city has no general advice to give subdividers in the way of a plan of proposed major traffic routes, there must be practical acceptance of each subdivider's own interpretation of the traffic needs of the community. The result is the disjointed arrangement of streets such as is now found in districts lying north and south of and along Ocean Avenue.

The secondary streets of this plan are narrow to conserve space, curving to fit the ground and are interconnected in such a way as to provide general circulation throughout the tract.

The major street plan is invaluable for use in the determination of business property in subdivisions such as this, as desirable business frontage can be determined by the predictable traffic or transit flow along certain major streets. Zoning or deed restrictions can then be utilized to protect the home owner from the encroachment of business elsewhere.

PLATE 25

Diagram of
PENINSULA DEVELOPMENT PROBLEMS


LEGEND
PRINCIPAL EXISTING TRAFFIC ROUTES
REQUIRED ADDITIONS
AREAS IN WHICH MODERATE TO HEAVY POPULATION DENSITIES MAY BE EXPECTED
N
SCALE IN MILES
SHOWING THE NEED OF SOME MEANS OF OPENING UP TO DEVELOPMENT THIS AND SIMILAR AREAS
SHOWING THE NEED OF SUPPLEMENTARY INTERCEPTER ROADS AND SUBDIVISION CONTROL TO GET THEM
"VISITACION" LAYOUT A GOOD EXAMPLE OF THE PROPER TREATMENT OF POCKETS
SHOWING THE ADVISABILITY OF A MORE DIRECT ROUTING HERE
SHOWING THE NEED OF WIDE CONTINUOUS LOW GRADE SHORE ROADS TO TAP THESE HABITABLE POCKETS
SUBDIVISION CONTROL WILL BE NEEDED IN ALL REMAINING UNDEVELOPED AREAS OF SUCH VALLEYS
SHOWING THE NEED OF PARALLEL RELIEF STREETS
SHOWING THE NEED OF PLANS FOR CROSS-PENINSULAR THOROUGHFARES

SAN FRANCISCO TRAFFIC SURVEY COMMITTEE — BARTHOLOMEW & ASSOCIATES — CONSULTANTS

1938

Plate Twenty-five

PENINSULA DEVELOPMENT PROBLEMS

In the past thirty-four years, nine small communities have been incorporated in San Mateo County. Four of these lie just below the San Francisco City and County Line and represent to a certain extent an overflow of this city down the peninsula. These immediately adjacent communities and the years of their incorporation are as follows:

Daly City	1911
Laundale	1924
South San Francisco	1894
San Bruno	1914

The emergence of these communities in the relatively habitable areas of the peninsula points plainly to the need of regional planning. Upon both San Francisco and San Mateo County rests a responsibility for the development of a system of highways which will adequately serve the circulation needs of the entire peninsula. Each separate city or town working alone cannot do what needs to be done.

The diagram opposite suggests broadly the point of view to be taken with respect to highway planning in the peninsula. It makes little difference what agency promotes planning of this sort; the essential need is for broad views to be taken of probable future traffic flow, the preparation of comprehensive plans of a suitable highway system and the enforcement of those

plans wherever necessary.

Thousands of acres of rural land in this section are awaiting the moment when city growth seems to justify their being platted into home sites. Will these acres be laid out solely in accordance with the wishes of individual owners or will the needs of the community have due recognition? Will the mistakes of the 1867 plan of San Francisco pueblo lands and of other street planners of early days be repeated, or will San Francisco and San Mateo County, in co-operation and in their own interest, extend a major street plan down the peninsula for the guidance of subdividers, draw up general plans which they can follow and in other ways endeavor to bring into existence in this vast unspoiled territory a street system that sympathetically fits the ground and answers the fundamental requirements of traffic?

The California Planning Act of 1927 gives authority to both cities and counties to adopt and preserve the integrity of a master plan of highways. In other words, San Mateo County alone can do what San Francisco was empowered to do in 1867 with respect to the pueblo lands. It can lay out a pattern of streets over areas eventually to be city property and can compel land owners where necessary to accept this pattern. This power is new and untried and may, to some, seem to be an unwarranted invasion of private rights.

As a matter of fact, it can easily be shown that if such a master street plan is well prepared, its acceptance by land owners is greatly to their advantage. Then streets will be

continuous where necessary, will be of adequate width, run in the proper directions, fit the ground, leave no fragmentary blocks and have the proper relationship in area to private property. The blocks which result will be of suitable width and length, will have the best frontage, will submit to economical subdivision into lots and because of lack of too narrow streets, jogs, dead ends, and other common deficiencies of the streets of the usual private plat, will have greater basic value. The opportunities offered by the California Planning Act of 1927 are so important that all the San Francisco peninsula should make immediate use of them. This Major Street study should be the basis of a new line of effort in the direction of city growth and the prevention of mistakes in street development.

APPENDIX

TABLE AND DESCRIPTION OF MAJOR STREET ROUTES

The following tabulation enumerates the streets comprising the various routes in the Major Street Plan. Route numbers are similar to those shown on the plan. The extent of each street to be used together with the present width and the present and proposed capacities are described below. Reasons for selection of the routes, and the function they perform in the Plan, are also specified.

I.

DESCRIPTION OF MAJOR STREETS

NAME OF STREET	Present Width in Feet		Pres. Cap'y in Lanes		Prop. Cap'y in Lanes
	Rdwy.	Street	Rdwy.	Str.	
1. MARINA - CERVANTES					
Marina: Lyon to Scott	60	100	6	8	6
Cervantes: Scott to Fillmore	40	70	4	6	6
Fillmore to Vallejo	To be	opened			6
Vallejo: Cervantes extended to Van Ness	38.75	68.75	4	4	6
Diagonal: Vallejo to Broadway	To be	opened			6
2. BAY					
Fillmore to Embarcadero	38.75	68.75	4	4	6
3. GREENWICH					
Lyon to Laguna	38.75	68.75	4	4	6
4. HARDING BOULEVARD - BROADWAY					
Harding Blvd: Pt.Lobos Dr. to 30th Avenue	54	---	6	6	6
Camino Del Mar: 30th to 29th Avenues	40	70	4	6	6
29th to Sea Cliff	68.5	100	6	6	6
Sea Cliff to 28th	45	80	5	6	6
28th to the Presidio	50	80	5	6	6
Road along south edge of Presidio, Camino del Mar to Lyon	20	--	2	--	6
Broadway: Lyon to Broderick	44.5	82.5	5	6	6
Tunnel: Broadway to Pacific and Pierce	To be	opened			4
Pacific: Pierce to Steiner	38.75	68.75	4	4	6
Diagonal: Pacific to Broadway	To be	opened			6
Broadway: Fillmore to Larkin	44.5	82.5	5	6	6
Larkin to Mason	Tunnel				6
Mason to Columbus	42.6 45.7	80.6 83.7	5	6	8
Columbus to Sansome	42.6 45.7	80.6 83.7	5	6	6
Sansome to Davis	55.0 55.1	82.5 82.6	6	6	6
Davis to Embarcadero	82.5	82.5	9	6	6

I.

DESCRIPTION OF MAJOR STREETS

DESCRIPTION

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1. This radial street will run from the Presidio to Broadway. It will furnish a direct route between the Presidio and Marina, and the distributor loop of the central business district.

2. Bay Street is crosstown between the Embarcadero and Fillmore Street. It will carry the interchange of travel between the Presidio and Marina, and North Beach and the docks.

3. Greenwich Street is car-line and radial from the Presidio to Cervantes extension. In conjunction with Route 1, it will carry travel between the business district and the Presidio-Marina District.

4. Harding Boulevard, the road through the Presidio, and Broadway will run as a continuous street from Sutro Heights and Lincoln Park to the Embarcadero. It will serve primarily as a radial to the central district from Pacific Heights, Richmond District, Sea Cliff and the Presidio. Broadway from Larkin to Columbus forms the northerly part of the by-pass route around the central district. Tunnels will be needed between Mason and Larkin and between Broderick and Pierce.

NAME OF STREET	Present Width in Feet		Pres.Cap'y in Lanes		Prop. Cap'y in Lanes
	Rdwy.	Street	Rdwy.	Str.	
5. CALIFORNIA					
33rd Avenue to Arguello	50	80	5	6	6
Arguello to Maple	55	85	6	6	6
Maple to Walnut	47	85	5	6	6
Walnut to Presidio Avenue	55	85	5	6	6
Presidio to Larkin	61	85	6	6	6
6. GEARY - POST					
Pt. Lobos Ave: 48th to 42nd	50	125	5	10	10
Geary: 42nd to Josephine	81	125	9	10	10
Josephine to Presidio Ave.	103	125	10	10	10
Presidio to Broderick	44.75	68.75	5	4	10
Diagonal: Geary to Post	To be	opened	-	-	10
Post: Scott to Larkin	38.75	68.75	4	4	10
7. BALBOA - TURK					
Balboa: Esplanade to Arguello	50	80	5	6	6
Turk: Arguello to Parker	56	100	6	8	6
Parker to Masonic	68	88	7	6	6
Masonic to Gough	38.75	68.75	3	4	6
Gough to Larkin	34.75	68.75	3	4	6
8. FULTON					
Esplanade to 8th Avenue	55	80	6	6	6
8th Avenue to Arguello	68	100	7	8	6
Arguello to Stanyan	48.75	68.75	5	4	6
Stanyan to Van Ness	38.75	68.75	4	4	6
9. FELL & OAK					
Fell: Stanyan to Baker	53.75	68.75	6	4	4
Baker to Market	38.75	68.75	4	4	4
Oak: Stanyan to Baker	53.75	68.75	6	4	4
Baker to Van Ness	38.75	68.75	4	4	4

DESCRIPTION

5. California Street runs from 24th Avenue to the business district. It will carry much automobile traffic between the business district and the residential area it penetrates. It will also serve to carry the interdistrict movements in this residential area. (See Route 6)

6. Geary-Post will form a continuous radial route from the business district to the Great Highway. A cross-over from Geary to Post at Divisadero is needed.

   Note: This route will be the primary radial to the west of the business district. Routes 4, 5, 7 and 8 are similar to Geary-Post in performing the duty of radial streets for the area west of the business district. They all penetrate this densely populated residential area and will also serve to carry the east-west intradistrict travel of the Western Addition and Park Presidio districts.

7. Balboa-Turk Streets will form a continuous route between the Great Highway and the business district. A jog will need to be eliminated at Arguello. (See Route 6)

8. Fulton Street runs from the Civic Center to the Great Highway. It will perform a duty similar to Geary-Post. (See Route 6)

9. Fell and Oak should operate as one-way streets and hence form a major route between Golden Gate Park and the business district. Fell should be made one-way west, and Oak one-way east. This route will serve as an important interchanger between the Sunset District and the business district and act as a radial for the entire area it penetrates.

NAME OF STREET	Present Width in Feet		Pres. Cap'y in Lanes		Prop. Cap'y in Lanes
	Rdwy.	Street	Rdwy.	Str.	
10. DUBOCE - TOWNSEND					
Diagonal: Hayes & Divisadero to Duboce & Church	to be	opened			6
Duboce: Scott to Church	56	80	6	6	6
Church to Market	56	80	6	6	8
Market to Mission	42	80	4	6	8
13th Street: Mission to Harrison	30	50	3	3	8
Harrison to Bryant	to be	opened			6
Division: Bryant to 9th Street	43	50	4	4	8
9th to 8th Streets	53	80	5	6	8
Townsend: 8th to 5th Streets	82.5	82.5	9	6	8
5th to 3rd Streets	(52.5 (67.5	82.5	5	6	8
3rd to Embarcadero	52.5	82.5	5	6	8
11. LINCOLN WAY					
Lincoln Way: Great Highway to Arguello	65	80	7	6	6
Frederick: Arguello to Shrader	44.75	68.75	5	4	6
Diagohal: Frederick to Parnassus	to be	opened			6
12. SUNSET DIAGONAL, JUDAH, 16th ST.					
Forty-first Ave.: Skyline Blvd. to Wawona	to be	opened			6
Wawona to Santiago	40	70	4	6	6
Sunset Diagonal: Santiago to Rivera	to be	opened			8
Rivera: 38th to 35th	50	80	5	6	8
Sunset Diagonal: 35th to Judah	to be	opened			8
Judah: Great Highway to Sunset Diagonal	50	80	5	6	6
Sunset Diagonal to Fifth Ave.	50	80	5	6	8
Parnassus: Fifth Ave. to Willard	50	80	5	6	8
Willard to Clayton	38.75	68.75	4	4	8
Tunnel: Clayton to Castro	to be	tunnelled			6
Beaver: Castro to Noe	30	60	3	4	8
Diagonal: Beaver to 16th	to be	opened			8

DESCRIPTION

10. The diagonal which intercepts Fell and Oak as an extension of Divisadero, together with Duboce, will run from Hayes Valley to the waterfront by way of Thirteenth and Townsend Streets. This route will be of primary importance to bring travel from the west so as to feed into the business district from the south via Harrison Street. (See Route 52) It will serve as an extremely important crosstown route connecting the Mission District with Hayes Valley, and form an important connection between the major street system of the Richmond District and the entire southeastern portion of the city. This route will also serve to carry large amounts of trucking west-bound from the south of Market wholesale-warehouse area. This route also intercepts the main routes of travel down the peninsula. (See routes 50, 51, 42 and 46)

11. Lincoln Way runs from the Great Highway to connect with a low level route to the eastern section of the city. (See Route 12) Lincoln Way will serve the intradistrict movement in the northern section of the Sunset District and also carry east-bound traffic by way of a road through Golden Gate Park, with Route 9, to the business district and by way of Route 12 to the Mission District, the business district and the industrial section.

12. Judah Street from the Great Highway and a new diagonal from the Skyline Boulevard will converge into a single channel, Judah Street, at 21st Street. This route will continue by way of a tunnel eastward to the bay. This route will collect traffic from Routes 11, 13, 14, 15, 23, 30, 31, 32 and 35 in the Sunset District and carry it under the Buena Vista barrier by means of a tunnel in direct line to 16th Street in the Mission District, and hence to the business district or industrial area. This route will open up the Sunset District to San Francisco.

NAME OF STREET	Present Width in Feet		Pres. Cap'y in Lanes		Prop. Cap'y in Lanes
	Rdwy.	Street	Rdwy.	Str.	
12. (continued)					
16th: Market to San Bruno	50	80	5	6	6
San Bruno to Mississippi	60	80	6	6	6
Mississippi to 6th	70	90	7	8	6
6th to Illinois	67	90	7	8	6
Diagonal: 16th & DeHaro to Hooper	to be	opened			5
Hooper: 8th to 6th	40	70	4	6	6
6th to 4th	to be	opened			6
4th to 3rd	40	70	4	6	6
13. NORIEGA STREET					
Great Highway to 48th	50	80	5	6	6
48th to Sunset Diagonal	64	94	7	6	6
14. QUINTARA STREET					
Great Highway to 19th	50	80	5	6	6
15. TARAVAL STREET					
48th to 12th	60	80	6	6	6
12th to Claremont	50	80	5	6	6
16. PORTOLA - MARKET					
New route thru Merced Lands as shown	to be	opened			(6 (8
West Portal: Sloat to 15th Ave.	76	100	8	8	8
Diagonal: West Portal to Portola	to be	opened			8
Portola: 14th Ave. to Evelyn	40	70	4	6	8
Evelyn to O'Shaughnessy	130	160	6	6	8
O'Shaughnessy to Twin Peaks Boulevard	20	70	2	6	8
Twin Peaks Blvd. to 24th St.	20	70	2	6	8
Market: 24th Street to Ord	46	70	5	6	8
Ord to 17th Street	74	90	8	8	8
17th to Van Ness	76	120	8	10	10
17. EIGHTEENTH STREET					
Market to Guerrero	40	64	4	4	6
Guerrero to Folsom	34	64	4	4	6

DESCRIPTION

13. Noriega Street, running from the Great Highway to Sunset Diagonal, will serve the intradistrict movement in the Sunset and act as feeder to Route 12.

14. Quintara Street from the Great Highway to 19th Ave., same as Route 13.

15. Taraval Street runs from Great Highway to Dewey Boulevard and in addition to providing necessary circulation in the area traversed, will carry traffic to routes eastward, such as Route 16.

16. This route extends from the business district to Lake Merced. It is an important radial, serving as a collector for numerous routes and connecting with Junipero Serra, one of the main routes from the peninsula. This route must accomodate future growth in the Lakeside and Merced Lands.

Eighteenth Street from Market Street Extension to Folsom is crosstown, serving the area traversed.

NAME OF STREET	Present Width in Feet		Pres.Cap'y in Lanes		Prop. Cap'y in Lanes
	Rdwy.	Street	Rdwy.	Str.	
18. 23rd & 22nd STREETS					
Grand View: Market to 21st	32	44	3	3	6
Worth: 21st to 22nd	30	60	3	4	6
22nd to 23rd	to be	opened			6
23rd: Douglass to Vicksburg	34	64	4	4	6
Diagonal: 23rd to 22nd	to be	opened			6
22nd: Dolores to Howard	40	64	4	4	6
Howard to Potrero	34	64	-	4	6
19. 26th - ARMY					
Douglass: 23rd to Jersey	36	60	4	4	6
Diagonal: Douglass to 26th	to be	opened			6
26th: Diamond to Mission	34	64	4	4	6
Mission to Hampshire	40	64	4	4	6
Hampshire to Potrero	to be	opened			6
Army: Potrero to Illinois	58-59	74-75	6	6	6
20. EVANS					
Army to Toland	60	80	6	6	6
Toland to Lane	50	80	5	6	6
Lane to Ingalls	60	80	6	6	6
21. OAKDALE - PALOU					
Joy: Holladay to San Bruno	20	40	2	3	6
Oakdale: San Bruno to 3rd St.	48	80	5	6	6
Diagonal: Oakdale to Palou	to be	opened			6
Palou: Lane to shore line	50	80	5	6	6
22. CRESCENT - WILLIAMS - YOSEMITE					
Leese: Mission to Crescent	26	40	3	3	6
Crescent: Leese to Salem	40	60	4	4	6
Salem to Silver	to be	opened			6
New street: Silver to Waterville	to be	opened			6
Waterville: New street to Thornton	36	60	4	4	6
Williams: Thornton to Phelps	to be	opened			6
Phelps to Yosemite	32	50	3	4	6
Yosemite: Williams to shore line	50	80	5	6	6
23. SLOAT - MONTEREY - SILVER					
Sloat: Great Highway to Portola	95	135	10	10	10
St.Francis Blvd: Portola to Santa Clara	40	100	4	8	6
Santa Clara: St.Francis to Monterey	40	80	4	6	6

DESCRIPTION

18. Extending from Market Street to Potrero through Noe Valley, this route will carry the east-west travel through the section of the Mission District traversed. It will carry a large amount of automobile traffic by way of Folsom to the business district. This route will also connect with Portola Drive and Market and hence supply a route to the west for the Mission District. (See Route 39)

19. The route crosstown extends from Douglass Street to Illinois Street. (See Route 18)

20. This route extends from Army to the end of Hunters Point and will serve as a trucking artery in the area traversed.

21 Oakdale-Palou extends from the bay to San Bruno. It will act as a radial in connection with Routes 50 and 51 and also to provide the necessary circulation for the area traversed.

22. This route extends from Mission Street southwest to the bay. (See Route 21) This route leads travel from the southeast to the Mission District.

23. This route extends from the Great Highway to Islais Creek. It is distinctly crosstown and the character of the route changes from residential to commercial to industrial, indicating a mixed use in the interchange of traffic it will bear.

NAME OF STREET	Present Width in Feet		Pres.Cap'y in Lanes		Prop. Cap'y in Lanes
	Rdwy.	Street	Rdwy.	Str.	
23. (continued)					
Monterey: Santa Clara to Ridgewood	56	80	6	6	6
Ridgewood to Circular	56	100	6	8	6
Circular to San Jose	48	60	5	6	6
San Jose to Silver	to be	opened			6
Silver: Mission to San Bruno	40	60	4	4	6
San Bruno to Quesada	27.5	43.5	3	3	6
Quesada to Quint	to be	opened			6
Quint: Silver extended to McKinnon	34	64	4	4	6
McKinnon to Evans	64	64	7	4	6
Evans to Davidson	54	64	6	4	6
Diagonal: Davidson to Arthur	to be	opened			6
24. WOOLSEY - PAUL - GILMAN					
Diagonal: Silver & Princeton to Silliman & University	to be	opened			6
University: Silliman to Felton	40	60	4	4	6
Diagonal: Felton & University to Hamilton & Woolsey	to be	opened			6
Woolsey: Hamilton to Brussels	40	60	4	4	6
Paul: Woolsey to San Bruno	to be	opened			6
San Bruno to Third	36	60	4	4	6
Gilman: Third to shore line	56	80	5	6	6
25. OCEAN - PERSIA - RAYMOND					
Old Ocean Ave: 41st to Junipero Serra Boulevard	to be	opened			6
Ocean: Junipero Serra to San Jose	60	80	6	6	8
San Jose to Mission	46	66	4	4	8
Persia: Ocean to Mission	to be	opened			6
Mission to LaGrande	36	60	4	4	6
LaGrande to Raymond	to be	opened			6
Raymond: McLaren Park to Delta	30	60	3	4	6
Delta to Alpha	36	60	4	4	6
Diagonal: Raymond to Arleta	to be	opened			6
Bay Shore Ave: San Bruno to Gillette	36	60	4	4	6
Gillette to Richter	to be	opened			6
Richter:	50	80	5	6	6
26. GENEVA - WALBRIDGE					
New street: Skyline Blvd. to Junipero Serra	to be	opened			6
Holloway: Junipero Serra to Harold	36	60	4	4	6

DESCRIPTION

24. This route extends southeast to the bay from Silver and will provide a connection between Route 23 and the Bayshore Highway. (See Route 21)

25. This route extends crosstown from Sloat Boulevard to the Bay. It traverses two parks and parallels a third and runs through residential area. It is largely for crosstown passenger automobile use. This is the main route to connect the Alemany, San Jose Boulevard and Mission with the Sunset district and vicinity.

26 This crosstown route extends from the Skyline Boulevard through Ingleside Terrace, Crocker Amazon and Vicitation Valley to the Bayshore Highway, jogs to be eliminated at Mission Street and Harold Avenue. This route will connect with

NAME OF STREET	Present Width in Feet		Pres. Cap'h in Lanes		Prop. Cap'y in Lanes
	Rdwy.	Street	Rdwy.	Str.	
26. (continued)					
Diagonal: Holloway to Ocean	to be	opened			6
Niagara: Holloway to Williar	to be	opened			6
Williar to Mission	30	60	3	4	6
Geneva: Mission to Moscow	75	102	8	8	8
Moscow to Walbridge	20	102	2	8	8
Walbridge: Geneva to city line	20	111	2	8	8
27. STANLEY					
New Route: Route 16 to Stanley	to be	opened			6
Stanley: Junipero Serra to Ramsell	30	50	3	3	6
Diagonal: Stanley to Alemany	to be	opened			6
28. GREAT HIGHWAY--SKYLINE BLVD.					
Pt.Lobos Ave: 48th to Great Highway	40	180	4	10	10
Great Highway: Pt.Lobos to Lincoln	--	180	-	10	10
Lincoln to Sloat	--	180	-	10	10
Skyline: Sloat to N.L. Olympic Golf Club	30	100	3	8	8
N.L. Olympic Golf Club to County Line	30	80	3	6	8
29. 41st AVENUE					
Entrance to Golden Gate Park	to be	opened			6
Lincoln to Sunset Diagonal	40	70	4	6	6
30. 36th AVENUE - SUNSET BOULEVARD					
36th: Harding Blvd to Clement	30		3	6	6
Clement to Fulton	40	70	4	6	6
Connection thru G.G.Park	to be	opened			6
Sunset Blvd: Lincoln to Vicente	40	70	4	6	6
Vicente to Sloat	56	60	6	4	6
Extension: Sloat to Old Ocean Avenue	to be	opened			6
31. 25th AVENUE					
25th: Sunset Diagonal to Wawona	40	70	4	6	6
Diagonal: 25th to 24th	to be	opened			6
24th Ave: Diagonal to Sloat	to be	opened			6
Extension: Sloat to Route 16	to be	opened			6

DESCRIPTION

26. (continued)
Ocean Avenue near Howth Street, thereby serving as an outlet for the Merced Lands to the business district by way of the Mission.

27. This route runs westward from the Alemany boulevard through the Merced Lands. It is a short connecting route forming an outlet for the Merced Lands to the Alemany Boulevard.

28. Skyline Boulevard-Great Highway extends from the county line to the Cliff House. It is one of the principal routes down the peninsula, to be used also as a pleasure drive.

29. Extends as crosstown from Golden Gate Park to the end of the Sunset Diagonal. Will provide route to beach and park from Sunset District, and in addition provide circulation in area traversed.

30. From Lincoln Park to Old Ocean Avenue this crosstown route will interchange the crosstown travel between the western parts of the Richmond District and Sunset District and furnish an outlet to the north for the Merced Lands.

31. Crosstown and feeder to Route 12 (radial), this route runs from the central part of the Merced Lands to the Sunset Diagonal. It will be of great importance as an outlet to these districts.

Name of Street	Present Width in Feet		Pres.Cap'y in Lanes		Prop. Cap'y in Lanes
	Rdwy.	Street	Rdwy.	Str.	
32. 24th AVENUE - 19th AVENUE					
24th: Camino del Mar to S.L. of Presidio	to be	opened			6
Presidio to Fulton	40	70	4	6	6
Connection thru Park	30	Park	3	-	6
19th: Lincoln to Sloat	56	70	6	6	6
Extension: Sloat to Route 16	to be	opened			6
33. JUNIPERO SERRA					
Sloat Blvd. to Ocean	74	165	8	10	10
Ocean to County Line	25	125	2	10	10
34. PRESIDIO PARKWAY					
14th: Lake to Fulton	40	70	4	6	6
Funston: Lake to Fulton	40	70	4	6	6
Road thru Park: Fulton to Lincoln	to be	opened			6
35. SANTA CLARA - DEWEY - 7th					
7th: Lincoln to Lawton	46	70	5	6	6
Lawton to Noriega	50	70	5	6	6
Laguna Honda: Noriega to Dewey	25	70	2	6	6
Dewey: Laguna Honda to Claremont	42	80	4	6	6
Claremont: Dewey to Portola	42	80	4	6	6
Santa Clara: Portola to St.Francis	40	80	4	6	6
36. MIRAMAR - PLYMOUTH - SICKLES					
Miramar: Monterey to Ocean	56	80	6	6	6
Ocean to Diagonal	40	70	4	6	6
Diagonal: Miramar to Plymouth	to be	opened			6
Plymouth: Diagonal to Farallones	36	60	4	4	6
Farallones to Broad	30	60	3	4	6
Broad to Sagamore	36	60	4	4	6
Sagamore to Sickles	30	60	3	4	6
Sickles: Plymouth to Mission	30	60	3	4	6
Acton: Mission to county line	30	60	3	4	6
37. FOERSTER - TERESITA					
Teresita: Portola to Foerster	40	70	4	6	6
Foerster. Teresita to Judson	30	60	3	4	6
Judson to Ocean & Tara	to be	opened			6

DESCRIPTION

32. Extending from Presidio to Sloat Boulevard, this route is crosstown, supplying the need of traffic flowing between the central portions of the Richmond and Sunset Districts. This route also will be of importance for travel down the peninsula.

33. Junipero Serra is radial with Route 16. It is of great importance in connecting the peninsula with the major street system of this city.

34. Funston Avenue is a parkway connection between the Presidio and Golden Gate Park. It is crosstown with Route 32 and used also for pleasure drive. (See Route 32)

35. Connects Portola Drive with Golden Gate Park, is a crosstown channel used for interchange of traffic between Forest Hills, St.Francis Woods, etc., and Golden Gate Park and the Richmond District. Used in conjunction with Route 39. (See Route 39)

36. This crosstown route extends from the county line to Monterey Boulevard and will be used in connection with Routes 23 and 35 as a channel to connect the area it traverses with the Sunset and Richmond Districts.

37. This crosstown channel connects Portola Drive and San Jose Avenue. It will furnish a new route to the peninsula highway system for the area it traverses.

NAME OF STREET	Present Width in Feet		Pres. Cap'y in Lanes		Prop. Cap'y in Lanes
	Rdwy.	Street	Rdwy.	Str.	
38. O'SHAUGHNESSY - WOODSIDE					
Woodside: Dewey to Portols	30	50	3	3	6
O'Shaughnessy: Portola to Delvale	40	90	4	6	6
Delvale to Orchard	40	60	4	4	6
Orchard to Bosworth	to be	opened			6
Bosworth: O'Shaughnessy extended to Burnside	36	50	4	3	6
Burnside to Diamond	40	60	4	4	6
Diamond to San Jose	to be	opened			6
39. ARGUELLO - STANYAN					
Arguello: The Presidio to Fulton	56	100	6	8	8
Stanyan: Fulton to Park Panhandle	38.75	68.75	4	4	6
Park Panhandle to Frederick	53.75	68.75	6	4	6
Frederick to Rivoli	38.75	68.75	4	4	6
Diagonal: Stanyan to Carmel	to be	opened			6
Carmel: Shrader to Clayton	34	64	4	4	6
40. PRESIDIO - MASONIC - CLAYTON					
Presidio Ave: Pacific to Washington	33.75	68.75	4	4	6
Washington to California	48.75	68.75	5	4	6
California to Post	38.75	68.75	4	4	6
Post to Geary	41.75	68.75	4	4	6
Geary to Masonic	to be	opened			6
Masonic: Geary to Oak	56	100	6	8	8
Oak to Waller	56	100	6	8	6
Waller to 1/2 Bl. So. of Waller	38.75	68.75	4	4	6
Diagonal. Masonic to Ashbury	to be	opened			6
Ashbury: Frederick to Clayton	38.75	68.75	4	4	6
Clayton: Ashbury to Carmel	38.75	68.75	4	4	6
Carmel to Market	34	50	4	4	6
41. DIVISADERO - ROOSEVELT					
California to Fell	52.5	82.5	5	6	6
Scott: Page to Duboce	38.75	68.75	4	4	4
Duboce: Scott to Castro	42	80	4	6	6
Castro: Duboce to 14th	44.5	82.5	5	6	6
14th: Castro to Alpine	34	64	4	4	4
Roosevelt: Alpine to 17th	48	60	5	4	4
17th: Roosevelt to Clayton	40	64	4	4	4

DESCRIPTION

38. This crosstown route extends from Dewey Boulevard to Route 23. It will furnish a connection between the Sunset and Richmond Districts, and the Excelsior District, John McLaren Park, Vicitation Valley and Hunters Point.

39. This crosstown route extends from the Presidio to Route 40. It will bring travel from the Richmond District by way of Route 40 over a high level connection to Routes 18 and 19 in the Mission District and beyond.

40. This crosstown route extends from the Presidio to Market Street. It will connect the Mission District with the area to the northwest. (See Routes 18, 19 and 39)

41. This route extends from California Street to Market Street by way of Divisadero and Roosevelt. It is crosstown and will connect the area it traverses with Portola Drive, a route to the peninsula.

NAME OF STREET	Present Width in Feet		Pres. Cap'y in Lanes		Prop. Cap'y in Lanes
	Rdwy.	Street	Rdwy.	Str.	
42. WEBSTER - DOLORES					
Webster: Broadway to Hermann	38.75	68.75	4	4	6
Hermann to Market	to be	opened			6
Dolores: Market to Army	54(2)	120	6	10	10
43. FOLSOM - BERNAL - SAN JOSE					
Folsom: 9th to 16th	52.5	82.5	6	6	8
16th to 19th	58.5	82.5	6	6	8
19th to 23rd	52.5	82.5	6	6	8
Diagonal: Folsom to Dolores	to be	opened			8
Dolores: Army to Bernal Cut	27+27	120	6	10	10
Bernal Cut: Dolores to San Jose	42+ 2 car tracks	117.5	6	6	6
San Jose: Bernal Cut to Sickles	60	80	6	6	6
Sickles to County Line	40	60	4	4	6
44. ALEMANY BOULEVARD					
San Bruno to County Line	80	100	8	8	8
45. VALENCIA					
Market to Mission	52.5	82.5	6	6	6
46. MISSION					
9th to Folsom Diagonal (S.P.RR.)	52.5	82.5	6	6	6
Folsom Diagonal to Army	52.5	82.5	6	6	6
Army to Alemany	58.5	82.5	6	6	6
Alemany to County Line	58.5	82.5	6	6	6
46-A NAPLES					
Craut: Silver to Madrid	to be	opened			6
Madrid: Craut to Avalon	40	70	4	6	6
Diagonal: Madrid to Naples	to be	opened			6
Naples: Diagonal to Russia	40	70	4	6	6
Diagonal: Russia to Geneva	to be	opened			6
47. HOWARD					
9th to Folsom Diagonal	58.5	82.5	6	6	6

DESCRIPTION

42. This crosstown route runs from Broadway to Route 43, connecting the area traversed with the routes to the peninsula. (See Route 43)

43. This route is radial and parallels Mission Street from the county line to the north end of Bernal Cut. Hence by way of Dolores, a diagonal and Folsom Street, it will reach the business district at Ninth Street. This route will be the main channel to the peninsula and one of the main radials to the business district.

44. The new Alemany Boulevard runs from the county line to San Bruno Avenue. It is a crosstown route connecting the industrial area with a large residential section.

45. Valencia Street is radial, running from Market Street to Route 43. It will assist Route 43 in distributing the load 43 carries to the city from the peninsula.

46. This route extends from the business district to the county line and is now one of the main radials. It is the oldest and most used route to the peninsula.

47. This route runs from the central business district to Route 43. (See Route 45)

NAME OF STREET	Present Width in Feet		Pres.Cap'y in Lanes		Prop. Cap'y in Lanes
	Rdwy.	Street	Rdwy.	Str.	
48. VAN NESS - 11th STREET					
Van Ness: Beach to 1/2 Bl. So. of Market	81	125	8	10	10
1/2 Bl. So. of Market to Lafayette	to be	opened			10
Lafayette: Mission to Howard	20	40	2	2	10
Howard to 11th	to be	opened			10
11th Street: Folsom to Bryant	50-	80	5	6	10
49. NINTH - LARKIN					
Larkin: Broadway to Bush	38.75	68.75	4	4	8
Bush to McAllister	44.75	68.75	4	4	8
McAllister to Grove	71	115	6	8	8
Grove to Market	44.75	68.75	4	4	8
Ninth: Market to Bryant	52.50	82.50	6	6	6
50. BAYSHORE - BRYANT					
Bryant: Harrison to 11th	to be	opened			6
11th to 20th	50	80	4	6	10
20th to Precita	54.2	84.2	4	6	10
Tunnel: Precita to Holladay	Tunnel				6
Connection: Holladay to Bayshore Highway	to be	opened			8
Bayshore Highway: Flower to County Line	100	125	12	10	10
51. POTRERO - BARNEVELD					
Potrero: Bryant to Division	to be	opened			6
Division to angle So. of 25th	68	100	6	8	8
Angle to Army	88	120	8	10	10
Army to Jerrold	77.5	90	8	8	10
Gerrold: San Bruno to Barneveld	60	80	6	6	8
Barneveld: Jerrold to Oakdale	not paved	80	-	6	8
Oakdale to Industrial	"	100	-	8	8
Industrial to Bayshore Hwy.	"	80	-	6	8
52. HARRISON					
Folsom to 12th	to be	opened			8
12th to 11th	52.5	82.5	6	6	8
11th to Fremont	52.5	82.5	6	6	10
Fremont to Embarcadero	52.5	82.5	6	6	8

DESCRIPTION

48. Van Ness Avenue and an extension will be the principal route by-passing traffic on the west of the business district. This route connects with Route 50. (See Route 50)

49. Ninth and Larkin between Broadway and Harrison Streets will sort and distribute the traffic entering the business district on radials from the west and southwest.

50. Bryant, connecting with the Bayshore Highway by means of a tunnel, will be one of the main arteries of travel to the peninsula. It is distinctly a radial street and acts as a collector for numerous routes it intercepts.

51. Potrero and Barneveld Avenue extends from the business district to the Alemany Boulevard. It will serve as a radial and auxiliary to Route 50 which parallels it. (See Route 50, also Routes 21 and 22)

52. This route extends between Folsom Street and the Embarcadero and will serve as a distributor and by-pass street around the business district. It will connect the proposed bay bridge with Route 50 and Route 43. (See Routes 50 and 43)

NAME OF STREET	Present Width in Feet		Pres. Cap'h in Lanes		Prop. Cap'y in Lanes
	Rdwy.	Street	Rdwy.	Str.	Lanes
53. BRYANT					
11th to 9th	52.5	82.5	6	6	6
9th to Converse	67.5	82.5	6	6	6
Converse to Embarcadero	52.5	82.5	6	6	6
54. 8th ST. - TOLAND - PENNSYLVANIA					
8th St: Harrison to Brannan	52.5	82.5	6	6	6
Brannan to 1/2 bl. So.	68.5	82.5	7	6	6
1/2 bl. So. of Brannan to Rhode Island	52.5	82.5	6	6	6
Rhode Island to Carolina	to be	opened			6
Carolina to 16th	52.5	82.5	5	6	6
16th to Iowa	to be	opened			6
Iowa: 18th to 21st	50	80	5	6	6
Diagonal: Iowa to Pennsylvania	to be	opened			6
Pennsylvania: 22nd to 26th	60	90	6	6	6
Toland: Pennsylvania to Evans	to be	opened			6
Evans to Jerrold	34	64	4	4	6
Jerrold to Alemany	to be	opened			6
55. 6th STREET					
Harrison to 16th	52.5	82.5	6	6	6
16th to 3rd	to be	opened			6
56. 4th - 3rd STREETS					
4th St: Harrison to Channel	52.5	82.5	6	6	8
Channel to Third	72.5	102.5	8	8	8
3rd St: Hubbell to 19th	30	100	3	8	8
19th to 1/2 bl. So. of 23rd	50	80	5	6	8
1/2 bl. So. of 23rd to 1/2 bl. So. of 24th	50	100	5	8	8
1/2 bl. So. of 24th to Burke	50	80	5	6	8
Burke to Bayshore Hwy.	70	100	6	8	8
57. THIRD STREET					
Harrison to Berry	54.5	82.5	6	6	8
58. COLUMBUS - FRONT - FREMONT					
Hyde: Ferry Slips to Jefferson	38.75	68.75	4	4	6
Jefferson to Beach	41.75	68.75	4	4	6
Beach North Point	44.75	68.75	4	4	6
Diagonal: North Point to Bay	to be	opened			6

DESCRIPTION

53. Bryant Street will act as an auxiliary to Route 52. (See Route 52)

54. This route extends from the business district by way of Pennsylvania Street through the Islais Creek industrial area and connects to Route 44. It will serve the area it traverses and act as an interchanger of trucking travel between the industrial regions to the north of Potrero Heights and similar regions to the south. (See Route 44)

55. Sixth Street extends from the business district to Third Street. It will act as an auxiliary street to the Third Street radial flow.

56. This route extends from the business district to the Bayshore Highway. This route is one of the principal radials to the business district, acting as an auxiliary in carrying the Bayshore load from the peninsula to the business district.

57. This short route extends from the business district to connect with Route 56 by way of Route 55. It will act as an auxiliary to Route 56. (See Routes 55 and 56)

58. This route extends from the Hyde Street ferry slips to the Embarcadero. It will serve as the eastern by-pass for the business district and also connect the Golden Gate Ferry and northern sections of the city with the proposed bay bridge.

NAME OF STREET	Present Width in Feet		Pres. Cap'y in Lanes		Prop. Cap'y in Lanes
	Rdwy.	Street	Rdwy.	Str.	
58. (continued)					
Jefferson: Hyde to Leavenworth	38.75	68.75	4	4	6
Beach: Hyde to Leavenworth	38.75	68.75	4	4	6
Leavenworth: Jefferson to Columbus	38.75	68.75	4	4	6
Columbus: Beach to Leavenworth	65	80	6	6	6
Leavenworth to Bay	50	80	4	6	6
Bay to Montgomery	50	80	4	6	8
Diagonal: Montgomery to Front	to be	opened			8
Front: Sacramento to Market	48.75	68.75	5	4	8
Fremont: Market to Embarcadero	52. 50	82. 50	5	6	8
59. FRONT STREET					
Embarcadero to Sacramento	45.75	68.75	5	4	6
60. EMBARCADERO					
Embarcadero: Bay to Berry	--	150	-	10	10
Berry: Embarcadero to Third	68.5	82.5	7	6	10
Third: Berry to Channel	74.5	82.5	8	6	10
Channel to Hubbell	50	80	4	6	10
Hubbell to Illinois	to be	opened			10
Illinois: 4th to Eldorado	50	80	4	6	10
Eldorado to 18th	120	150	10	10	10
18th to Tulare	50	80	4	6	10
Tulare to Arthur	to be	opened			10
Arthur: Illinois extended to	106	150	10	10	10

DESCRIPTION

59. Front Street extends from the business district northward to the Embarcadero. It will connect with Route 58. (See Route 58)

60. This route extends along the Embarcadero from Hyde Street slips by way of Berry Street to Illinois Street, and Southward to Hunters Point. This route will be a heavy trucking route back of the wharves and through a heavy industrial area.